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ABSTRACT

This report relates the history and describes the impact of the Wisconsin State Universities Consortium of Research Development on each of the 5 member institutions (La Crosse, River Falls, Stevens Point, Stout and Whitewater) and on the state of Wisconsin in general. WSU CORD was federally funded in 1966 to develop interest in and the capacity to carry on research concerned with improving teaching and learning and strengthening instruction at the Wisconsin State Universities. It was decided that a joint research project conducted by the cooperating institutions would be the major focus of the first year's work. The project undertaken was an investigation of the "Diversity of Intellective and Non-Intellective Characteristics between Persisting and Non-Persisting Students Among Campuses." A series of research workshops were also held at each campus to provide the faculty with a basic understanding of educational research. Emphasis during the second year was placed on investigation of a major problem within each institution and "seed money" for individual research projects was granted by the US Office of Education. This report contains summaries of the 46 projects undertaken by faculty members. (JS)

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WSU-CORD

The Wisconsin State Universities Consortium of Research Development

HOW BIG A RIPPLE?

The Impact of the Wisconsin Consortium of Research Development

Participating Institutions:

Wisconsin State Universities
La Crosse, Stevens Point, River
Falls, Stout and Whitewater

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William H. Clements
Coordinator, Wisconsin CORD Program

May, 1970

HE002 507

This publication is dedicated to sixty or more Wisconsin State University staff members who took time, during their strenuous teaching schedules, to conduct important teaching-learning research. It is a tribute to these people that nearly every funded project has been completed and an acceptable summary written by the time this publication goes to press.

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FOREWORD

A man throws a stone into the calm waters of a lake and then watches the ripple or wave from the stone's impact move outward in all directions. If the stone is flat and is thrown almost horizontally, it may skip on the water and produce a whole series of ripples. But the impact of the stone on the water is measured in the size of the ripples and the distance outward that they eventually extend.

The impact of the Wisconsin CORD program on the Wisconsin State Universities and surrounding communities can be thought of as being analogous to the ripple of a stone thrown on the water. How big a ripple did the CORD program make, or how big a ripple is it now making at the conclusion of three years of Federal funding? This report is written in an attempt to answer that question. The "calm waters of the lake" symbolize the Wisconsin State University Community which before 1966 was largely devoid of the turbulence of teaching-learning research in higher education.

By 1966 the U. S. Office of Education was able to determine that very little research money was reaching the medium sized and small colleges and universities. The idea of teaching-learning research consortia for small and medium sized institutions was advanced at this time, and the Wisconsin State University consortium was one of the first ones funded under this plan. Preparations were made by President James Albertson of Stevens Point, and the funding proposal was written by his assistant, Dr. Kurt Schmeller. By June 29, 1966, the U. S. Office of Education approved a consortium centered at Stevens Point and including La Crosse, River Falls, Stevens Point, Stout and Whitewater State Universities. The Presidents of the universities committed matching funds, and the consortium received a grant of $50,000 for its first year's operation.

The pages that follow are written in an attempt to describe briefly the history of the consortium, and to spell out in more detail the impact it has produced on each of the five campuses and in the state of Wisconsin in general.

EARLY STEPS IN COOPERATIVE PLANNING

The first word that WSU-CORD would be funded was received in mid-June of 1966 when the designated project director was suddenly called to Washington to meet with John Blue of USOE in order to put the contract in final form. The time spent in Washington, though brief, was used to reach an understanding with Federal officials concerning the purposes of the project.

Final word of funding approval was received in early July. Meanwhile each WSU President appointed a Coordinator to become the local member of the CORD Board of Governors. Meeting at Stevens Point on August 3, 1966, the first Board of Governors consisted of: Dr. James Erickson, La Crosse; Dr. Richard Delorit, River Falls; Dr. William H. Clements, Stevens Point; Dr. John Furlong, Stout; and Dr. Charles Graham, Whitewater. Later Mr. Paul Kelch of Stevens Point was made Controller.

The present CORD coordinators are: Dr. James Erickson, La Crosse, Dr. Philip Anderson, River Falls; Dr. William H. Clements, Stevens Point, Mr. Ray Szymanski, Stout; and Dr. Patrick Monahan, Whitewater.

At the time of this first meeting, there were no Federal guidelines, and no Federal representative closer than Washington D. C. with whom to consult concerning the project. However, a brief statement (see Appendix A) was provided by the funding officer when the project was approved. This statement was considered, together with purposes stated in the original project proposal, in defining the purposes of WSU-CORD. The following statement of purpose is quoted from the first yearly progress report:

> "The chief purpose of the Wisconsin CORD Project is the promotion of educational research in the five institutions concerned; development of interest in and capacity to carry on research concerned with the improvement of teaching and learning. The program is aimed at strengthening instruction at the Wisconsin State Universities."

The original proposal specified the use of research seminars and cooperative research activity for the purpose of building research capacity. Hence, the second meeting was devoted to planning seminars and determining areas of common interest for cooperative research activity.

The next two joint meetings were devoted to planning research workshops and the cooperative research project. A cooperative study of university dropouts was identified as having first priority. It was decided that, in keeping with the original purposes of the consortium, a joint research project conducted by the five cooperating universities should be a major concern of the first year's work. Personnel of the various institutions would thus come to know each other and learn to work together as a team.

It was agreed that in the second year, emphasis would be placed on a major problem within each institution. Following this, individual research problems would receive attention. During the second year of operation, the "seed money" plan for encouraging individual research projects was put into operation by the U. S. Office of Education.

A description of the first year's joint CORD-sponsored research follows.

IMPACT OF THE CORD DROPOUT STUDY

The cooperative study of University dropouts and its impact are described in the following pages.

Diversity of Intellective and Non-Intellective Characteristics Between Persisting and Non-Persisting Students Among Campuses

Project Director: David W. Coker
Wisconsin State University - Stevens Point
Local Project Number 7

The research described here, and directed by David W. Coker of Stevens Point, is a joint venture of the five Wisconsin State Universities. Assisting Mr. Coker, in particular, were Donald Benz, WSU-Stevens Point; William Webster, WSU-River Falls; Sam Wood, WSU-Stout; John Jenks, WSU-La Crosse; and John Prentice, WSU-Whitewater.

The Wisconsin State Universities, like other institutions of higher education, have been concerned for the large number of entering freshmen who have withdrawn from their respective institutions within one year of the time of entering. This study attempts to relate various characteristics of students entering the five WSU-CORD Universities to their academic status one year after date of matriculation. Students who were enrolled in the institution one year after entering as freshmen were labeled persisting. Students not enrolled a year after entering were labeled non-persisting. The non-persisting students were separated into two classes: Those who were dropped or withdrew for academic reasons within a year (labeled NPA) and those who withdrew or were dropped within a year for other reasons (labeled NPO).

Predictive variables that were related to student status include: sex, campus of matriculation, ACT composite and sub-test scores, high school percentile rank, average high school grades, size of high school graduating class, number of university credits earned, place of college residence, academic major, vocational choice, vocational role, and education aspirations. Data obtained at time of matriculation were gathered by the American College Testing Program, and made available from ACT records.

The population studied consisted of the entering freshmen to Wisconsin State Universities La Crosse, River Falls, Stevens Point, Stout, and Whitewater in the fall of 1965 - a group of nearly 7,000 students.

Analysis of statistical differences in bivariate distributions was made with the use of the chi-squared test, and analysis of differences among mean squares was made using Duncan's New Multiple Range Test.

The findings of the investigation are too numerous and varied to be reproduced here. However, a number of variables were found to be significant discriminators between persisting and non-persisting university freshmen.

How big a ripple did the cooperative dropout study make? Not all of the effects could be measured, but some can easily be identified. On each campus, the various academic departments were asked to think about cooperative research and to decide what kinds of teaching-learning problems they needed to work on. On all five campuses the Department of English had serious problems in coping with large numbers of students and in updating curriculum and procedures. Though the teaching of freshman composition was not chosen for cooperative study, all five campuses actually did complete CORD-funded research related to the teaching of freshman composition. All of these projects had their origin in the discussions concerning cooperative research.

A second impact of the Dropout Study had to do with data gathering and computer services. Computers for research purposes, and the personnel to operate them, were lacking on nearly every campus. The manipulation of data for computer use had first to be mastered before the cooperative research became a reality. The variables examined as possible predictors of academic success were not reported in similar form from all institutions.

A third impact of the Dropout Study concerned the data-gathering techniques of the State University System. Although a sizeable quantity of student data had been reported to the Office of the Board of Regents of State Universities, these data were not found to be complete, comparable, and in such form as to be available for the Dropout Study. From 1967 on, the State University System has moved steadily toward the use of more complete and more uniform data gathering, not only of student data but other data as well. It was the Dropout Study that pointed out this need.

Other impacts of the Dropout Study are more difficult to observe. The various predictors of academic success are being pursued further. At least one such set of investigations has been published: the Stevens Point investigations relating high school class size to college success.[1] It is expected that publications relating to other academic predictors will follow.

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[1] Clements, William H., "A Third Look At High School Size," Office of Institutional Research, Wisconsin State University - Stevens Point. November, 1969. pp. 26.

Impact of the Research Workshops

One of the first-year projects sponsored by the WSU-CORD Consortium was a series of research workshops, one on each campus. Since a major purpose of CORD is to build research capacity in institutions having comparatively little such capacity, basic understandings of research on the part of faculty should receive high priority. The research workshops brought to each campus one or more experts to improve the writing of research proposals for funding, research design, and the criteria by which research is evaluated. These workshops, along with the State Research Funds program administered by Dr. Roy Heath of the Office of the Board of Regents of State Universities, have helped State University Staff to plan and conduct sound research.

Two statewide meetings deserve special mention. In January, 1967, a Seminar on Educational Research was held at Stevens Point for the purpose of orienting deans and other high level university personnel to the purposes of the Consortium and also to use their collective thinking in charting the directions in which the Consortium should move. Joseph L. Murnin, Director of Educational Research, Region V of the U. S. Office of Education was the feature speaker. At this meeting the Federal Guidelines for Consortia of Research Developments were distributed for the first time to the participating university personnel.

A second joint meeting was held at Stevens Point on July 13, 14, and 15, 1967, to which research directors of public and non-public universities were invited. Dr. Donald McIssac, Director of the Wisconsin Information System for Education, University of Wisconsin, was a feature speaker. The opening address was given by Dr. Robert DeZonia, Executive Director, Association of Independent Colleges and Universities. This meeting took the form of a workshop where the participants analyzed the state of educational research at their own institutions and considered what research was needed in the future.

The impact of the July, 1967, research workshop is still evident. Besides whatever motivations and understandings were gleaned from the workshop by the participants, some tangible results can be observed. At the conference, the research representatives of the Wisconsin State Universities agreed to meet periodically to discuss common goals and common problems. This loose organization, known as the WSU-Association for Institutional Research has met regularly for the past three years. Later, in conjunction with the institutional research directors of the University of Wisconsin system and the Vocational, Technical and Adult Education system, and some directors of non-public colleges and universities, a statewide, loosely federated organization has been formed, entitled the Wisconsin Association for Institutional Research. The joint conference held at Pigeon Lake in June, 1968 under sponsorship of the Board of Regents Offices also contributed to this unity of research interest.

Finally, two research workshops for CORD participants were sponsored by the U. S. Office of Education. One was held at Monmouth, Oregon, in August, 1967. The second was held at Traverse City, Michigan, a year later. Wisconsin CORD participants benefited greatly from these experiences.

The Impact Campus by Campus

Two policies introduced in 1967 by the U. S. Office of Education greatly improved the research output of the five institutions comprising WSU-CORD. One was the use of "seed money" to encourage small feasibility studies by faculty who were interested in improving higher education. The second was the provision for a full time Associate Director whose business was to visit all campuses and work with interested faculty in the planning and execution of CORD-sponsored research projects. Dr. D. Edward Eustice came from the State University of North Dakota at Fargo to act as Associate Director of WSU-CORD for four months during 1968. The Associate Director for the year 1968-69 was Dr. Paul Cameron Holman of Flint, Michigan. Mr. Eustice established excellent liaison with researchers on all campuses, and counseled them in the preparation of research proposals. Mr. Holman helped to establish sound research standards and efficient research procedures which resulted in more and better research proposals. The impact of the work of these two men is shown in the steadily increasing quality and quantity of the research proposals approved for funding.

The following pages describe in non-technical language the projects that were conducted on each campus. The purposes, procedures, findings, and apparent impact are summarized briefly for each research project which received CORD funds. In almost every case the impact report was written after conference with the project director. Those who would like more complete details of a particular investigation should read carefully the final report submitted to the U. S. Office of Education.

The Ripple at WSU-La Crosse

Wisconsin State University-La Crosse is situated in a city of approximately 50,000 in population, located on the Mississippi River in western Wisconsin. This institution, which in 1969 enrolled more than 6,600 students, has a long tradition of excellence in the preparation of teachers. The number of letters and science graduates has increased rapidly. Graduate education in many areas has made rapid strides. From the time CORD funding was provided, the La Crosse Coordinator and representative on the Board of Governors has been Dr. James H. M. Erickson, Dean of the Graduate College.

The brief research summaries which follow are those CORD-funded projects which were conducted at WSU-La Crosse, and for which final research reports have already been received. In these and other research summaries, no attempt is made to give complete details of the research projects. The purpose of each summary is to inform the reader of the general nature of the research through provision of certain basic information, and to indicate what impact each project may have had on educational practice in general for the University, the department concerned, or the individual(s) who conducted the research. The descriptions of individual research projects follow. The reader will note, however, that three related studies concerning student teaching have been grouped together.

STUDYING AND MODIFYING STUDENT TEACHER BEHAVIORS AT WISCONSIN STATE UNIVERSITY-LA CROSSE

1. The Study of Student Behavior in Science as a Result of Modification of Certain Identifiable Teacher Behaviors
   Investigators: Waldo R. Widell, Bobby Gowlland, Norman Schein
   Local Project No. 50
2. The Study of Student Achievement as a Result of Certain Identifiable Teacher Behaviors
   Investigators: Waldo R. Widell
   Local Project No. 49
3. Designing and Implementing a Conceptual-Behavior Curriculum Structure for Preparing Secondary Teachers
   Investigators: Donald E. Davis, Milford O. Holt, and Justin K. Lemke
   Local Project No. 9

The three investigations named above are interrelated in such a way that it seems advisable to present them as one. They represent a systematic study of student teaching now under way at La Crosse. Although the investigations are closely related, they are in no way overlapping.

Bridging the gap between introductory study of teaching and the actual student teaching experience is a major problem in education. The investigators named above work with the preparation of Secondary School teachers at Wisconsin State University-La Crosse.

Dr. Davis and associates worked with the development of conceptual behavioral curriculum elements in the dimensions of planning, verbalizing, motivating, controlling-disciplining, and evaluating. The course work for the secondary teaching students was an intermediate course between introduction to education and student teaching. The project consisted of three major features, each of which was characterized by certain concepts and practices which may be conceived as alternatives to the existing pattern of pre-service preparation in secondary education:

1. The Conceptual-Behavior Curriculum Structure
2. The Two-level Preparation Sequence
3. Staff Organization and Instructional Procedures

The first alternative, conceptual behavior curriculum, considered the five dimensions of teacher behavior in terms of the knowledge and abilities most necessary for successful teaching.

The two-level preparation was organized to eliminate overlapped learning by eliminating gaps and duplications in what was learned. Level one was considered as preparation for student teaching, while level two centered around the student teaching activity. At level one, planning might concern the preparation of a unit of study. At level two, planning was augmented and tested by performance in a real classroom. Under this arrangement, the supervisory role of the college supervisory staff tends to shift from that of visiting and random observing to that of working more directly with and through the cooperative classroom supervising teacher in the capacity of clinical curriculum and instruction specialist.

The third aspect of teaching, staff organization and instructional procedures, requires the teaching supervisors to teach in the manner that they tell others to teach. A project was planned and taught by a team of three.

The impact of this joint supervisor-student teacher experience is significant. The curriculum resulting from the experience is part of a course that helps bridge the gap between the theories of learning and the actual practice of student teaching, before the student is actually assigned as a bona fide student teacher.

A chi square test of significance was used to determine whether or not the experimental group performed better in measures of planning, motivating, verbalizing, controlling-disciplining, and evaluating than did other high school teachers in training. The performance of the experimental group proved to be distinctly superior, thus demonstrating the experimental group were clearly becoming the best prepared teachers.

The Widell team was concerned directly with the measurement observations of student achievements - behaviors resulting from certain practice teaching behaviors in the experimental program for secondary education teachers. That part of the Widell investigation which examined student achievement was concerned with changing student behavior in micro-teaching situations by means of video taping. The method used for giving a (student) teacher information about his teaching performance was the Stanford Appraisal Guide of Teacher Competence. The areas studied were aims. planning, and performance.

Mean scores of the student teachers on the Stanford Appraisal Guide showed significant improvement between lessons taught in one situation and then retaught in another. The means were: teach I, 2.64; reteach I, 3.99; teach II, 3.24; reteach II, 4.10. A perfect score is 5.00.

A second measure of class interaction, Flanders Interaction Analysis, was utilized. The student teachers were taught the Flanders scale which determined the per cent of time the teacher and the students talked during the micro-teaching period. Thus the student teachers were aware of two independent scaled appraisals of their teaching performance.

The null hypothesis tested in this phase of the study was that changed teacher behavior will not result in increased student achievement. Since the scales indicated significant change in student behavior, the conditions for testing his hypothesis were satisfactory. Achievement scores before and after the teach-reteach experiment were compared, and it was found that although scores averaged somewhat higher after the micro teaching experience was completed, they were not significantly higher.

The Widell experiment just described presents conclusive evidence that micro-teaching by student teachers can be improved significantly through the feedback from video tapes, with the use of scales that will make the feedback more objective. The investigators recognize that this technique is still to be perfected. They have not yet demonstrated that students achieve better in intermediate or beginning education courses as a result of micro-teaching experience.

The Widell-Gowlland-Schein experiment was conducted in order to test and modify a system for recording verbal interaction in the science laboratory. Again the video tape was used to provide feedback to the student teacher concerning his laboratory teaching procedures. Three classes of 24 students each were involved in the experiment, and the teaching areas covered were earth science, physical science, and biological science. The Verbal Interaction Category System was used to analyze student presentations to classes. In the first cycle of the experiment each student teacher was exposed to a laboratory situation as an observer noting the variety of activities which occurred during the period. The second cycle was composed of student teacher direction of laboratory situations.

Each of the 22 laboratory situations was recorded via the small groups interaction model. Every three seconds a category was recorded which appeared to best describe the type of activity during that period of time. Twelve kinds of behaviors can thus be recorded and compared for various laboratory situations.

Two hypotheses were tested concerning student performances following the feedback from a first laboratory teaching experience: that the proportion of desirable teaching categories would increase, and that the proportion of undesirable categories would decrease significantly. The t test of significance showed clearly that both hypotheses were strongly supported. The investigators conclude that science teachers when exposed to laboratory situations as a model were able though feedback which consisted of an analysis of these laboratory situations by the small group interaction system, to not only duplicate the model but to improve upon it significantly at the .05 level. In certain areas of performance, these teachers, with the help of feedback, were able to show improvement that was identified at the .05 level of significance. Therefore, the small group interaction system was an effective means of feedback when viewing taped laboratory situations.

Impact

The intermediate teaching course, developed with the help of the three studies just described, now takes on the form of a core curriculum. It includes certain academic subject matter useful to the teacher, student teaching experience as a teacher aid, and micro teaching. The student teachers are provided with some permanent records of their teaching, aimed at their improvement, and developed with the use of TV tapes. The subjects used were those at the La Crosse Campus School.

It is difficult to assess all of the impact of these experiments. However, one result is a much improved course to bridge the gap between teaching theory and practice. The student teachers themselves undoubtedly are more able and will carry on in many school communities as a result of this superior education experience. They will be better practice teachers and better ultimate teachers for having learned to measure and evaluate in terms of how they have taught. Some student teachers have found before they got into practice teaching that teaching is not for them. They found the intermediate curriculum to be a "clinical" or "doing" course.

Not the least of the outcomes of these experiments is the resulting staff involvement in curriculum development. Whereas three people originally were involved in the experiments, there are now six members of the education staff involved. Because of the funding, the staff also has more instructional material with which to work, and a growing, developing program that will produce better secondary school teachers.

AN EXPERIMENT USING THREE FILMS IN RHYTHMICAL GYMNASTICS USING HAND APPARATUS

Investigator: Mary I. McLellan
Wisconsin State University-La Crosse
Local Project No. 31

The use of films in teaching is common practice. What is not common is the development and use of films for teaching rhythmical gymnastics using hand apparatus. The investigator not only validated the use of films, but actually acted as technical director for making the films.

The content of the films was determined by consultation with experts in rhythmical gymnastics. Three films were produced: one using hoops, one using balls, and the third using clubs. Since no films for this purpose existed prior to the time these were made, the filming was quite experimental. The limited funds available for filming forced the investigator to improvise in securing demonstrators, providing music, and in selection of dress, make-up, background, and suitable camera angle.

The experiment evaluating use of the films called for an experimental group and a control group. Both groups were taught by the investigator in similar manner, but only the experimental group viewed the films. A panel of five judges rated each student's performance in the three kinds of rhythmic gymnastics, using a .7 point scale. The performances of experimental and control students were then compared.

The statistical finding of the comparisons, though not sensational, are encouraging. There was a fair amount of agreement among the ratings of the judges. Although the experimental group performed a little better on the gymnastics using balls and clubs, only their performance with hoops was consistently better than that of the control group.

Aside from statistical comparisons, the films were found to be good motivators. They are valuable as specimens near-perfect performance which can be viewed over and over again.

The films have been placed in the Audio Visual Center at La Crosse, and are available on a free rental basis from that source. The investigator has been using these films to teach rhythmical gymnastics, and numerous high schools in the La Crosse area have responded favorably to the films and have used them in their teaching programs. In the future they will receive state-wide publicity. Since there have been requests for purchase of these films, copyrighting of them is being considered.

The investigator now sees films like these as useful in teaching how to judge artistic gymnastics: uneven parallel bars, balance beam, side horse vaulting, and floor exercise.

TEACHING LEARNING RESEARCH AT WISCONSIN STATE UNIVERSITY AT LA CROSSE

Investigator: Ronald S. Burman
Wisconsin State University-La Crosse
Local Project No. 4

The first research project funded for CORD for La Crosse was an experiment in the teaching of freshman composition. A new course was planned, labeled English 110, as an alternate approach to the traditional course labeled English 102. The large number of entering freshmen each year was a strain on the faculty resources at La Crosse as elsewhere. Several questions leading to a course revision were asked. Was there a more efficient way of teaching composition? Could some of the presentations be done in large assembly groups, especially concerning the basic principles and the theories of rhetoric? Could students be placed in large groups for some class work and small sections for other class work without weakening the quality of learning?

The La Crosse experiment sought answers to these questions. Some classes contained as many as four or five hundred students. In these classes the lecturer used the overhead projector to present ideas in one hour that required sixteen hours by sixteen instructors. On the other hand, specific problems in grammar, punctuation, mechanics, and spelling were taught in small groups of 25 students each. After this method had been tried for a semester, the theme quality of students in English 110 and 102 was compared. Themes written by the two groups, and randomly chosen from each, were read and evaluated by a faculty team from the University of Wisconsin at Milwaukee. When presented to the evaluating team, the compositions were not identified by class. The evaluating team removed "non-productive" themes (those that were too brief to be considered acceptable). The differences in the ratings of English 110 and English 102 themes lead to the conclusion that any differences observed are due to chance and are not significant with respect to the treatment involved.

Thus, it appeared that a 3-credit course in freshman composition resulted in a writing sample approximately as good as the writing sample produced by the 6-credit traditional composition course given at La Crosse.

In connection with the experimental program, there appeared to be certain advantages. The students were systematically exposed to the same presentations. A writing clinic, open eight hours a day, was made available to students in which the staff was willing and the resource materials were ample. The staff teaching small sections were freed from the repetitions of generalities of rhetoric and could devote their time to classroom discussion and develop improvement in student compositions. There appeared to be a substantial saving in clasroom space, manpower, and funds without apparent deterioration of achievement in writing. The English Department concluded that the program has merit and that it might well be tried elsewhere.

What is the impact of this experiment? First of all, it has raised many questions as to the value of a freshman composition course. The experiment has produced a new look at Freshman English at La Crosse. Some factors relating to writing ability have been studied more closely. It has been found that many of the students cannot write because they cannot read. There now appears to be justification for giving a 3-credit composition course to the more able students, and 6-credit course to the students who do poorly on a standardized English test. Thus, the experiment points to the group according to two levels of ability.

Like other groups engaged in experimental programs, the La Crosse English Department learned by experience. The program was too large at the start; that is, too many students were involved in the experiment at the beginning so that there was difficulty in operating the experiment under the most ideal conditions. From experience the staff can learn to correlate the large assembly and small class activities better.

In summary, the findings of the experiment were inconclusive. However, the experiment was a wholesome and thought-provoking experience for the English staff at WSU-La Crosse.

COLLEGE LEARNING WITH AND WITHOUT FORMAL CLASSROOM INSTRUCTION

Investigator: Clark E. Himmel
Wisconsin State University-La Crosse
Local Project No. 21

Eighty randomly selected students from a class in general psychology were split into two groups, experimental and control, in order to determine the effectiveness of self-directed study. The experimental group was given two days of careful orientation to the self-directed study technique and materials, and then was released for the remainder of the semester from any class attendance requirement or continuing contact with a live teacher except for periodic scheduled examinations. Each student was provided with a programmed text and a wealth of other materials. They reported weekly the amount of time spent studying general psychology.

The control group remained in a large lecture session provided three times weekly by seven faculty members in a pseudo "team teaching" approach. The tests given to the two groups were quite similar.

The experimental subjects averaged significantly higher than the control subjects on a traditional type of final examination. The experimental group also gave significantly higher ratings than the course content and especially the teaching-learning method than did the control group. Three months later the differences in ratings for subgroups still favored the experimental group but only at the .10 level of significance. The grade point ratios of experimental subjects averaged slightly, but not significantly higher than those of the control subjects. In other respects the two groups had almost identical characteristics. However, in a 12-month follow-up, seven of the control group had "flunked out", but none of the experimental group had flunked. There was some tendency for experimental subjects to choose more psychology courses than did control subjects.

The Himmel study is having significant impact, some of which will not immediately be known. It is incorporated in a doctoral thesis, and will be published in one of the research journals. Many of the techniques developed for this experiment will be incorporated in regular psychology courses. The findings have stimulated other department members to try similar or varied experiments, and to try out the techniques in educational psychology courses.

The study has helped to foster student responsibility. The experiment has given students opportunity to do their work when and how they want to. The student assistant in this study gained invaluable experience. He is now a graduate student in psychology.

The Himmel experiment has helped to produce impetus for providing the physical space for a learning center. Such a center is likely to have considerable use, since it is clear that students strongly tended to favor the experimental method.

PERSONALITY CORRELATES OF SUSCEPTIBILITY TO SET IN LEARNING

Investigators: Naomi M. Meara, Stanton E. Wixson
Wisconsin State University - La Crosse
Local Project No. 32

Most educators, and especially most psychologists, are aware of the possible effects of mental set upon learning progress. Mental set is the concern of the research here briefly described. Specifically, the question asked by investigators Meara and Wixson is: If you expect students to do well at a given task, will they perform significantly better than a similar group of students who were expected to not do well? It is to be understood that the expectations are communicated to the students. The study is based on the assumption that certain non-cognitive factors, such as mental set, influence the learning process.

The subjects of the investigation were 93 students enrolled in general psychology at Wisconsin State University-La Crosse. Each subject completed the Myers-Briggs Type Indicator before being randomly assigned one of four treatment groups. The Myers-Briggs Type Indicator is a test designed to determine whether an individual prefers to utilize information he has gained intuitively or information he has gained empirically in the solution of cognitive skill problems. Tasks given to the groups are described as follows:

Group I performed a verbal discrimination learning task with a positive set.
Group II performed the same task with a negative set.
Group III performed a paired associate learning task with a positive set.
Group IV performed the same task with a negative set.

Instructions to students give the impression that they had already been classified on the basis of scores on the Myers-Briggs type indicator, when in fact the Myers-Briggs responses had not yet been scored, and in fact the students had been assigned randomly. The positive mental set is achieved by the added statement in the instructions: "Your Myers-Briggs scores indicate that you will do very well on this task." The negative mental set was achieved by the statement: "Your Myers-Briggs scores indicate that you will not do very well on this task."

A four part analysis of covariance of scores of the four students groups was computed. The discrete variants were set, sex, and set-sex interaction, and the covariants were the Myers-Briggs scales, EI (extroversion-introversion), SN (sensing-intuiting), TF (thinking-feeling), and JP (judgment-perception). The findings do not support the hypothesis that set, sex, set-sex interaction, or Myers-Briggs scores as measured in this experiment affect performance in the simple verbal learning tasks. However, in this experiment, intelligence was not controlled. The purely random samples obtained for the study actually may have had significantly different intelligence means. The investigators conclude that any such future experiment should include some guarantee that intelligence is a controlled variable. The investigators also believe that future research should concentrate on better measures of non-cognitive factors.

Since only certain non-cognitive factors were studied, there are numerous other possible predictors to be studied. The investigation described here is only the first of several that may be made by psychologists at Wisconsin State University-La Crosse. This first attempt has been a valuable learning experience for the researcher.

TEXTBOOK UNDERLINING AS AN INDEX OF STUDENT IDENTIFICATION OF RELEVANT INSTRUCTIONAL MATERIAL

Investigator: James J. Ryan
Wisconsin State University - La Crosse
Local Project No. 38

The investigator was interested in determining some indices of student identification of relevant textbook material in psychology course work. An examination of textbooks to see how much and what the students underlined was conducted as the major aspect of the study. Mr. Ryan had several questions in mind. What proportion of students underlined parts of the text? What characterized these students? Especially, did students underline significant portions of the text? Was there evidence that the "quality" of underlining relates closely to the quality of student achievement as measured in the course?

Textbooks used for the first time in a large introductory class and in an advanced psychology class were systematically examined to measure the amount of individual student underlining. The amount of text underlining was related in each course to the student's achievement measures, with the student's general academic ability being considered as a control variable in the introductory course. It was found that a highly reliable measure of the total amount of underlining per student could be obtained from observations of underlining on a relatively small number of randomly selected pages of the text.

There was evidence that lower ability students did underlining to a greater extent than did students of greater ability. There was no clear evidence that underlining facilitated achievement, although the evidence did lean that way. Since only about 50 per cent of the students did underlining, this practice does not provide a reliable index of identification of relevant material.

The investigator is convinced that text underlining as related to achievement needs more intensive study. While there is some indication that underlining helps the student, the fact that low ability students did more underlining tended to counter finding. Perhaps underlining tended to counter finding. Perhaps underlining is most useful to low ability students. Mr. Ryan is convinced that students were not deterred from underlining by fear of dissapproval because the book is marked. He believes a more useful study could be made if some students were directed to underline while others are told not to mark the text. Such a study, he thinks, would give a better answer to the question, "Does underlining facilitate learning?"

A FOLLOW-UP OF PSYCHOLOGY MAJORS GRADUATED FROM THE LA CROSSE STATE UNIVERSITY, 1965-1968, FOR THE PURPOSE OF EVALUATING THE UNDERGRADUATE PSYCHOLOGY PROGRAM

Investigator: Thomas M. Harris
Wisconsin State University - La Crosse
Local Project No. 20

It is always helpful for an academic department of a university to re-examine itself: its policies, curriculum, and its standards, periodically. Recent graduates of the department provide a valuable and independent source of constructive criticism. The chief obstacle to departmental follow-up is cost, which usually exceeds available departmental budget. The modest sum from CORD funds made possible the Harris study, a follow-up of psychology majors at WSU-La Crosse.

A 150 item questionnaire was distributed to all recent LSU graduates who were psychology majors, and to some undergraduate majors in psychology. A portion of the questionnaire was devoted to gathering basic information from each respondent, including their employment since graduation. Most of the form was devoted to appraisal of the psychology curriculum and its improvement.

Returns from 74 graduates and 58 undergraduates were analyzed. It was found that nearly half of the graduates took some graduate work and that psychology and social work were the subjects most often chosen. Social work was the most frequent field of employment, with management second. Only one major was currently employed full time in psychology.

Questionnaire responses had generally favorable ratings for all courses offered, but the ratings were sometimes surprising. Two courses that the department was about to drop were rated well. A course never given at La Crosse was favored by the great majority of students, and will now be offered. The content and difficulty level of courses were carefully appraised by the respondents.

The findings of the study had quite a sweeping impact at the departmental level. The findings affected the difficulty level of courses, helped determine which courses will be taught in the future. Appraisals of the usefulness of courses led to careful re-evaluation of each course.

Because the study has proven successful, the Department of Psychology plans to follow up its graduates annually. The opportunity for funds with which to prepare a questionnaire and conduct the initial study has been a great help to the department.

A FOLLOW-UP STUDY OF 1968 GRADUATES OF WEST CENTRAL WISCONSIN HIGH SCHOOLS

Investigators: Robert M. Jackson, Manmohan S. Aurora
Wisconsin State University-La Crosse
Local Project No. 23

A STUDY OF THE EFFECTS OF FATHER IDENTIFICATION ON THE POST-HIGH SCHOOL CHOICES AND BEHAVIORS OF ECONOMICALLY DEPRIVED RURAL YOUTH

Investigator: Robert M. Jackson
Wisconsin State University-La Crosse
Local Project No. 24

The titles named above are two separately funded investigations which will be summarized in a single report by Mr. Jackson. His survey was a follow-up of high school graduates in the CESA 11 intermediate district of Wisconsin. The initial purpose was to compare student data of this population with those of other populations, and to study such factors as mobility, economic standards, and parental occupations.

A sub-population of more than 1,000 high school senior males in rural areas were the subjects of the second investigation which is aimed at studying levels of aspirations of these economically deprived youth. The insights gained could be used for improved counseling and education of these youths and others like them. On this aspect of the study an 83 per cent return was obtained. At the date of this report, the complete analysis has not yet been submitted. However, it is clear that father identification in many of these poor families is lacking, and perhaps as a result, the level of aspiration of many of these young men is quite low - an abnormal proportion live in broken homes. These young men will move into unskilled work where they will be relatively non-productive members of society.

The delay in final analysis of data is due to the need to follow up these students one year after high school graduation. The last responses have recently been received.

The impact of the investigation cannot yet be fully determined. However, several facts are clear. The University follow-up of high school seniors has set an example which is being emulated in the La Crosse area. Several high schools in the area have initiated follow-ups of their graduates. It is reasonable to suppose that better understanding of high school seniors' needs and problems will result in better high school guidance and instruction. The University and high schools of the La Crosse area will no doubt benefit from the contacts made. This appears to be one more instance in which the WSU-La Crosse Department of Psychology is reaching into the surrounding community and providing it with professional leadership in the manner that such a department should.

The Ripple at WSU-River Falls

Wisconsin State University-River Falls is situated in the western part of Wisconsin. This institution has maintained high scholastic standards over a period of many years. Its programs for the education of teachers, with specialization in the teaching of agriculture, have attracted many students who had ranked in the upper one-fourth of their high school classes.

The River Falls CORD Coordinator at the time of funding was Dr. Richard Delorit. When in 1967 Mr. Delorit assumed the Acting Presidency of WSU-River Falls, he turned over his responsibilities to Dr. Philip Anderson, Dean of Graduate Studies at River Falls. Mr. Anderson has carried the responsibilities of coordinating the CORD research activities since that time.

The following research summaries give a brief overview of the nature, findings and impact of the teaching-learning research that has been carried on under CORD funding on the River Falls campus.

AN INVESTIGATION OF RELATIVE PERFORMANCE FACTORS IN FRESHMAN ENGLISH AT WISCONSIN STATE UNIVERSITY-RIVER FALLS

Investigator: Robert H. Beck
Wisconsin State University-River Falls
Local Project No. 1

Of course you can demonstrate that entering college freshmen who take freshmen composition can write better and perform better on tests of language proficiency than those who don't. Of course you can demonstrate that nine quarter hours of freshman composition will produce better writing and language skill performance than six quarter hours. Or can you? Members of the Department of English at Wisconsin State University - River Falls are not so sure, after reviewing the findings of research directed by Robert H. Beck.

In this investigation, 244 entering freshmen at River Falls were selected randomly and assigned to one of five groups which differed in the amount and timing of their freshman composition instruction. One group took no composition course in the freshman year, while another took three courses of three semester hours each. The other three groups each omitted one of the three required three-credit courses in freshman composition. The findings of the research are based on 232 cases.

The criteria for writing proficiency, administered at the end of the freshmen year, were:

1. A writing proficiency examination rated by five readers on six criteria.
2. The Brown-Carlson Listening Test.
3. The Iowa Reading Test.
4. A language-knowledge (content) test devised by the staff.

Statistical analysis was conducted of scores on each criterion for each of six characteristics: course sequence, sex, size of high school class of origin, occupational backgrounds of parents, intended majors, and vocational professional plans. Only the Freshman English context distinguished those who had taken no composition course from those who had taken two or more classes. Women scored consistently higher than men on the criterion tests. No significant differences were observed in performance as related to high school class size. There were significant differences in performance by major, with agriculture students scoring lowest. On the writing test, students planning careers in the professions, private business, government, or as self-employed scored high, while those planning careers in travel, or as housewives, or were undecided, scored low. This difference was significant at the one percent level. There were no significant interactions.

The findings, though part of them are puzzling, had significant impact for the Freshman English program, and on the Department of English. The study resulted in complete revision in the syllabus of Freshman English courses. The objectives of these courses have been raised and made more definite. The course content has now been tied to the objectives. The teaching methods have been revised and brought more in line with present objectives. It has been recommended that on the basis of analysis of variables concerning the students' backgrounds, the department begin to use some predictions for those who might profitably be excused from Freshman English in order to reduce class size or reduce staff need. It is recommended that the self-education for the Freshman English staff be continued, and that a foundation of material and experience be laid upon which to build further testing and refining of the Freshman English curriculum.

In summary of the impact of this research it can be said that a whole department has re-examined its teaching of freshmen, and it has found out some important facts, even though sure answers are scarce. Freshmen do know something about the language, but they don't use the language better because they know more about it. English instructors still do not know enough yet about how to teach the language skills. If students are learning, is it because of what goes on in class? We do not know for sure. Nor is there yet enough information to determine how efficiently students are motivated in class. If it is known that recommended books are checked out, there is evidence of motivation.

The research has produced more thought about what is being taught and more conscious standards of evaluating writing. Insight gained by the project director, Robert Beck, have been put to use in providing a set of defined goals and behavioral objectives. Library source work has been developed from the experiment, and a systematic method has been devised for keeping it up to date. The CORD ripple of impact is significant in the River Falls Department of English.

AN INVESTIGATION OF THE PERCEPTUAL-MOTOR ABILITY OF SMALL TOWN AND RURAL DISADVANTAGED CHILDREN

Investigator: James F. Kerfoot
Wisconsin State University-River Falls
Local Project No. 26

What differences in perceptual and motor abilities exist between small town or rural disadvantaged children and the norm groups that are typical of "children-in-general"? Researchers at River Falls attempted to answer this question as a first step in improving the education of disadvantaged children.

For the purpose of this study, disadvantaged children were defined as those whose parents had not achieved education through grade 12. It is, therefore, proper to label these children culturally disadvantaged in that respect. By this definition, family income is not a determining factor in identifying disadvantaged persons. A stratified random sample of 98 disadvantaged children, sampled from various grade levels, was drawn from a school system in a town and rural setting. Their perceptual motor performance was compared with that of unselected children at each grade level, as indicated by the test norms. The instrument used was the Purdue Perceptual-Motor Survey, developed by Eugene Roach and Newell Kephart (1966).

One might doubt that a sample selected simply because of less educated parents would differ significantly from the norms on a test of perceptual-motor performance. In fact, there were some significant differences, though not at every grade level. Differences between norm and disadvantaged groups on the total test score were significant at the .01 level. Sex and grade differences for total test scores were equally significant. Disadvantaged boys also performed significantly below the norm, but disadvantaged and unselected girls did not perform differently enough to be significant. Significant differences existed at some grade levels but not at others. The pattern of performance for disadvantaged children appears to be inconsistent. Perusal of subtest differences reveals some subtests for which performances of disadvantaged children were consistently far below those of unselected children. Examples are: Imitation of Movement, Vertical Lines, and Diagonal (each eye).

The research findings confirm generalizations in the literature which suggest that these deficiencies do exist for disadvantaged children. This research does not confirm the find by Roach and Kephart that the rate of growth in motor skills of disadvantaged children is consistent. The findings indicate that there is a tendency for the performance of disadvantaged children to deteriorate as grade level increases, as has been pointed out in the literature.

What impact does this study have on learning? First, it is clear that deficiencies do exist. The group studied really was sub-normal. The next step will be to find what corrective instruction, if any, can be provided. What should be the nature of such instruction is not yet clear. The research, therefore, represents a point of departure.

There are important outcomes of the study that are already apparent. The University at River Falls now has a data-bank on perceptual motor skills for many children. This bank can lead to corrective instruction. Quite as important is the fact that University personnel have gotten out into the surrounding school systems where their contacts with teachers and parents will be mutually helpful.

IDENTIFICATION OF STUDENT NEEDS AND DESIRES FOR EDUCATIVE EXPERIENCES OTHER THAN THOSE FOUND IN THE CLASSROOM ENVIRONMENT

Investigators: Wayne J. Kassera and Bruce Peterson
Wisconsin State University-River Falls
Local Project No. 25

What experiences outside the classroom do college students feel the need for? Is there anything a growing campus can do to enrich the co-curriculum in a constructive way? These questions were raised by two investigators on the River Falls campus. There are some research findings to indicate that in general, student interest in campus activities is declining, particularly on large campuses. If a growing campus does not make available those activities that appeal to students, a logical step is to find out what activities do appeal, and provide them.

The primary purpose of the study conducted by Kassera and Peterson was to determine the needs and desires of the student body at WSU-River Falls. Student needs were sought relating to: art, athletics, community services, contemporary issues, drama, field and stream, foreign languages, games, literature, music, physical and natural sciences, and social and behavioral sciences.

The fact-gathering instrument for this investigation was a six page questionnaire to 500 randomly selected students. Although the sample was randomly selected, it was found to be quite representative of the student body also, as shown by the statistics of the final report.

Nearly all students who responded were interested in educative experience outside the classroom. Males were interested mostly in athletics, while females preferred various other activities. As expected, commuters were somewhat less interested in these activities than were others. While hall residents might obtain some of these experiences in their housing units, the Student Center was considered the most appropriate place for them. The study provided valuable insight into the interests or needs of various campus groups: residents of halls, commuters, married students, men, and women. A 62 per cent response was obtained, but the report is based on 281 fully completed questionnaires.

An important impact of this study is the basis it provided for a better University activities program which is now being put into operation. The research provides an accurate index of student preferences concerning the nature, place, and frequency of educative experiences outside the classroom. Without such findings, the program would have to be developed by costly trial and error. It is hard to determine the true value of a workable campus activities program. Later on it may be possible to determine whether or not the research has contributed significantly to increased student participation in worthwhile nonclass activities. Such activities should of themselves be considered worthwhile achievements.

A PILOT PROJECT TO DEVELOP INSTRUMENTS FOR AN IMPACT STUDY OF WISCONSIN STATE UNIVERSITY - RIVER FALLS

Investigator: Walker D. Wyman
Wisconsin State University-River Falls
Local Project No. 52

This research is an attempt to construct or devise an instrument for appraising the impact or influence a university has had over a period of many years. Questionnaires are common, but a comprehensive questionnaire of the size of the one developed for the stated purposes of the River Falls impact study is rarely attempted and difficult to achieve. Since the success of the impact study depends on responses numbering in the thousands, the form must be such that many people are willing to respond, even in view of the fact that doing so is quite time-consuming. At last report, responses to the questionnaire were pouring in by the hundreds, and most of them were filled out quite satisfactorily. A total response of 50 to 60 per cent is anticipated.

WSU-River Falls has more than 12,000 graduates since its founding in 1874. The Alumni office has addresses for about 8,000 of these graduates, and about 7,700 "live" addresses. It was to these 7,700 graduates that the questionnaire was mailed.

The impact of the Wyman project will be felt in the future, in publications based on the questionnaire. An economics professor will use the data for a series of special studies. Dr. Philip Anderson will use the data for a study of the impact that WSU-River Falls has had. Among other things he will observe the flow of students and graduates between states, noting the number and source of non-resident students and where graduates go. A book for laymen, "Here's River Falls" by Wolf and Anderson is an anticipated product of the questionnaire. Finally, Dr. Walker Wyman will use data from the questionnaire returns to prepare a Centennial History of Wisconsin State University - River Falls, to be published in 1974.

In view of these anticipated outcomes, the Wyman impact project will have an impact that is felt for years to come.

PERSONALITY DIFFERENCES AMONG SWIMMERS

Investigators: Michael Davis & Charles Stewart
Wisconsin State University-River Falls
Local Project No. 10

This investigation was preceded by a feasibility study in which students of physical education were asked to demonstrate the ability to swim 25 yards. Those who passed this test were called swimmers as opposed to those who did not pass the test who were then designated non-swimmers. The experimental subjects were selected randomly from both groups so that four classes were identified: male swimmers and non-swimmers, and female swimmers and non-swimmers. With the help of girls from the physical education honorary sorority, the scores of the subjects were recorded and some 39 hypotheses were tested. Subscores were subjected to one way analysis of variance.

The findings of this study were interesting. It was found that male swimmers were more aggressive, experimental, and tolerant of change than male non-swimmers. They also tended to challenge authority. Women swimmers were clearly more feminine and also more sensitive than male swimmers. Numerous other findings have implications for the understanding and dealings with college age young people.

The implications of the study and the impact of the study are suggested by the findings. The physical education staff and other staff have gained considerable insight into personality differences of their students. The staff has cause to think about the significance of the findings. For example, the aggressiveness of the male swimmer identifies him as someone whose energies can be channeled into worthwhile activities. Since women are more sensitive, it is clear that the instructor needs to consider this fact in his dealings with them.

The investigator has gained numerous insights from the study. He has learned much about design and about the implications to be encountered in this kind of investigation. He points out the need to follow up this study with others. For example, there is need to study the personality of persistent non-swimmers. The study has opened the way for a significant series of personality studies relating to physical education.

STUDENT AND FACULTY PERCEPTIONS OF DESIRED COUNSELING CENTER RATE

Investigator: John B. Hamann
Wisconsin State University - River Falls
Local Project No. 19

This investigation was made in order to define more clearly the role of the University Counseling Center at River Falls. A questionnaire was mailed to some 500 randomly selected students and faculty. From this number, 326 usable responses were returned, or 65 per cent. Since this study and the Kassera-Peterson study represent the first research attempts by the Counseling and Guidance Service on the River Falls campus, they have helped to validate the usefulness of the center.

The findings of the Hamann study suggest the impact it has made. First of all, the responses were encouraging: the service is helpful. There is a need for more personal counseling. The responses enabled the center to determine what hours are most needed; they point to the need for hours of 8 a.m. to 5 p.m.; plus certain evening hours.

It was also found that a new course entitled Personal Growth and Development is not yet fully appreciated by students; they are not generally aware of its availability and usefulness. It was found that students are not aware of and do not use all of the counseling services available on the campus.

These findings have produced efforts to advertize the guidance courses and services to students.

Several guidance policies have received empirical support from the study. The counseling center is housed separately in a former two story residence. Responses of students indicate that it is good to have the Center housed in a separate building. Students also supported the policy of having younger counselors. They verified the generation gap, since most of them preferred counselors under the age of 30, while very few if any preferred counselors over 50 years old.

To a large extent, faculty and student responses tended to agree. The fact that students need help but are not getting all the help available to them has provided a sort of challenge to the counseling center.

A COMPARATIVE STUDY OF TWO LABORATORY TEACHING METHODS

Investigator: Robert L. Calentine
Wisconsin State University-River Falls
Local Project No. 5

Mr. Calentine is an avid researcher and writer. The experiment to improve teaching in one of his classes, however, was something new, and the results were unexpected. He compared two methods of laboratory teaching in introductory biology in order to determine the most effective technique. In one class he used a large number of 2 by 2 projection slides and in the other class he used blackboard drawings. The criterion of success was a set of test scores which showed more learning in the control group than in the experimental group using slides.

While the results seemed disappointing at the time they were obtained, much good has come out of this study. Mr. Calentine found that if he relied too much on the visual aids, the students did not get into the meat of the learning as they should have. In a beginning biology course it was necessary to concentrate on basic facts and concepts rather than on too much saturation with the use of slides. He has not modified his procedure in the basic course and is using the visual aids judiciously in the teaching of basic materials.

Mr. Calentine has also found that more visual aids are needed in Histology, which is a more advanced course. Here the use of visual aids could be increased while in the beginning biology course they needed to be limited.

Thus, the researcher is learning which teaching methods are most effective as a result of the CORD sponsored project. Several important outcomes of the initial project are evident. Mr. Calentine is now using some state research money to continue his investigation. He feels that he has learned something about educational research where previously his knowledge was not biological research. He has learned how to improve research design and how to write a good research project. In fact, he is about to prepare a proposal for Federal funding of small grants. And he is continuing to experiment with teaching even without funds.

Undoubtedly the most important outcome of this study is the improved learning of Mr. Calentine's biology students as a result of his experiments and of his experience and of the ensuing improved methods which they stimulated.

PERSONAL ADJUSTMENT AS A RESULT OF PARTICIPATION IN A SPEECH FUNDAMENTALS COURSE

Investigator: John A. Oostendorp
Wisconsin State University-River Falls
Local Project No. 34

In this study Mr. Oostendorp attempted to determine the extent to which participation in a high school course on fundamentals of speech influenced personal adjustment, and the nature of such adjustment. A standardized test of personality adjustment was administered in three high schools to students who had completed such a speech course, and to a control group which had not had such a course.

What the researcher did not anticipate was the significant differences in personality adjustment that existed originally in the compared groups. Students in the speech course were those who had elected the course, and their personality profiles were more favorable than those of the control groups. The researcher plans to improve the design of the study and do it over. He will try the experiment in schools that are using the text. His previous experience had made him aware of the problems he will encounter in such research.

Some important insights have come out of this study. Students who put off taking speech courses are essentially different from others. Each high school has its own personality. The students of the three high schools made different kinds of personality gains, probably because of significantly different community environment.

In summary, Mr. Oostendorp has learned a great deal about educational research, including how to design such studies as the one described above. He has made important contacts with the public schools, and eventually he will produce an important piece of research.

A PROJECT TO MEASURE THE ATTITUDES THAT SCHOOL BOARD MEMBERS AND ADMINISTRATORS HAVE TOWARD PARTICIPANTS IN HIGH SCHOOL ACTIVITIES

Investigator: John A. Oostendorp
Wisconsin State University-River Falls
Local Project No. 35

This study involved a questionnaire survey intended to obtain the views that school board members and school administrators have toward participants in various school activities. It is significant that the image one has of participants in an activity reflects somewhat the attitude of the respondent himself toward the activity. A Semantic Differential was given to school board members and school administrators. It was thought that analysis of responses would help the researcher to gain insights about perceptions of co-curricular activities. This research was done partly to gain the necessary research know-how and to find out what some of the problems are in research of this kind.

The findings of the study can be obtained from the final report, and most of them will not be detailed here. However, it was found that the attitudes of school board members and school administrators did tend to agree. There was a tendency to rate cheerleaders as the most sociable and friendly. The respondents tended to rate debate participants highest in most respects. The 80 per cent response was achieved with two follow-up letters.

Again it may be said that the research know-how and the contact with public school officials are part of the impact of this study. Mr. Oostendorp will take the findings of the study to the local research committee. He hopes to obtain funds to conduct further investigations of this type, using the help of the National Research Training Institute at Monmouth, Oregon.

The Ripple at WSU-Stevens Point

Wisconsin State University-Stevens Point has been the home base of the Consortium since it was organized in 1966. There are certain advantages of the home base: easy access to meetings on the part of faculty; the incentive of being the founding institution; ready access to the Associate Director who can help advise concerning research procedures, and help with the framing of research proposals. William H. Clements has, from the time of initial funding, been the Stevens Point and General Coordinator of the Wisconsin CORD program.

Situated in the central part of Wisconsin, the Stevens Point campus has been the site of a rapidly growing teacher preparation institution which had more than 7,900 students in the fall of 1969. Majors in Natural Resources and Home Economics have attracted large numbers of students over recent years. The number of Letters and Science graduates and Applied Arts and Sciences graduates have rapidly increased in recent years.

The reports which follow represent a wide range of the disciplines on the Stevens Point campus.

THE WSU-STEVENS POINT FRESHMAN ENGLISH PROJECT

Investigator: Mary Jo Buggs
Wisconsin State University-Stevens Point
Local Project No. 3

"How much writing should be required of college freshman composition students?" This is the basic question asked by members of the Department of English at WSU-Stevens Point. The study proposed by Dr. Lee Burress, Jr. was designed to compare, during and at the end of an experimental period, the quality of writing of three groups of composition students. The groups were given the following writing requirements:

Group A: 4,000 words in 12 essays
Group B: 8,000 words in 20 essays
Group C: 16,000 words in 38 essays

Assignments to groups were made randomly to five instructors who participated in the experiment. In each group, ten themes were subjected to evaluation by the instructor and by lay readers. All themes, however, were evaluated by the instructor for each of the 185 students.

The findings of the study were largely those one might anticipate. None of the three groups showed any significant change between average pre-test and post-test scores on the Iowa Test of Educational Development. All three groups improved significantly from pre-test to post-test scores on the English Cooperative test, as determined by mean scores. The mean ratings for themes, both of instructors and lay readers, did not vary significantly. The mean ratings for theme 10 did vary significantly in such a way as to indicate that more writing means better writing. However, each group improved significantly from the first to the last theme rated. Though independently marked, the ratings of course instructors and those of lay readers strongly tended to agree.

To the question, "How much writing?" this study gives a tentative answer: "The more the better." The findings have confirmed the need for more writing and, therefore, smaller class size. The research has produced support for the proposal to limit composition class size to 20 so that more themes can be required and read by the instructor.

The Department of English is experimenting with ways of getting students to write more. For example, the students are now asked to keep a daily journal in which they are expected to write a page or at least 100 words each day. Some instructors collect the journals weekly, and although they cannot evaluate all of this writing, they have an opportunity to scrutinize it.

The department is also preparing to try out the use of large assembly groups for two hours per week and small groups for two hours per week for a total of four class hours. The large assemblies, however, would not be lecture sessions; they would provide communication between students and the faculty leader, as well as between students. All English staff will be invited to participate if they wish in the experimental class arrangement.

A STUDY IN THE UTILIZATION OF TECHNOLOGICALLY ADVANCED TECHNIQUES FOR TEACHER-PARENT-CHILD ASSESSMENT

Investigator: Phyliss Ravey
Other Investigators: Hildegard Kuse, Dennis Fields
Wisconsin State University-Stevens Point
Local Project No. 36

The investigation described here concerned the use of video tapes as a means of assessing and reporting the behaviors of kindergarten children. A task-oriented performance of twenty-four children at the Wisconsin State University-Stevens Point Laboratory School was video-taped in twelve minute segments. The children were presented in groups of six, the groups being chosen on the basis of availability.

At a scheduled conference, both parents of each child (separated by a screen) viewed the tape and recorded five specific items of behavior as they saw it. Thus, each became a "person-watcher" rather than a "listener to the teacher" at the parent conference. Parents then compared their tabulation after viewing the tape. As it happened, mothers and fathers sometimes viewed their child quite differently. They were given opportunity to discuss with the teacher the child's performance. The parents participated well, indicating that they had great interest in this form of reporting.

The investigator is convinced that use of the video tape produces better parent understanding, and eventually, would produce better parent-teacher relations. The parents can make their own evaluation of what is shown on the tape. If in the future video tapes get cheaper, each child could have his own tape.

Apparently this experiment has never been tried before. The grant funds were used to procure the tapes, which could not have been purchased otherwise. Since the tapes are now available, the experiment will be tried again when time permits. On the taping of child behaviors there is opportunity to do, and to demonstrate, much creative teaching.

The technique seems sure to cement better parent-teacher relations. When mothers and fathers don't see their child in the same light, it is easy to see how the teacher may view the child in a different light than parents do.

This experiment has been reported in the Laboratory School News Letter. There is opportunity to publish the report later in a widely read journal. In the fall of 1970, Phyllis Ravey will report on the experiment to an area education audience in Wisconsin. Eventually, the impact of this study may be quite significant.

USING TYPEWRITERS AS A TOOL TO TEACH BEGINNING READING TO PRIMARY CHILDREN, TO IMPROVE INSTRUCTION OF PRIMARY TEACHER TRAINEES

Investigator: Hedy Telfer
Associate Investigator: Hildegard Kuse
Wisconsin State University-Stevens Point
Local Project No. 43

Can typewriters be used in first grade as a tool for beginning reading? Specifically, does use of the typewriter help improve the vocabulary of first graders? This is the basic question to which an answer was sought in Hedy Telfer's first grade class at the WSU-Stevens Point campus Laboratory School. A secondary purpose was to provide contact with children by college freshmen and sophomores preparing to major in education. These students worked for ten weeks with nine pairs of first grade children, half of whom worked on reading materials with the help of IBM typewriters. The control group children did the same using pencils in front of a TV camera to negate the Hawthorne effect. The college students switched pairs after five weeks to counter personality differences.

Pretest and post-test scores of the children on alternate forms of the Gates-MacGinitie Primary Reading Test and the Dolch 220 word basic reading list were used to measure reading progress. The number of words each child wrote each day was recorded.

Pupils who used the typewriter averaged somewhat higher in the Gates-MacGinitie and Dolch tests. However, the scores on the Stanford Achievement test given at year's end indicated that gains of the experimental group were not significantly greater.

Despite this finding, the investigators consider the experiment very worthwhile. The children found use of the typewriter stimulating. Since the experimental group did make somewhat greater gains as measured by two tests, and since the experiment lasted for only ten weeks, during which the children had to learn how to use the typewriters, it is possible that the experiment might have made really significant gains if the experiment could have been conducted over a longer period of time. The experiment was concluded at the end of the school term. The possibility of follow-up tests is now gone, since several of the experimental and control subjects have moved to some other community.

The secondary purpose of the study was achieved. Quite a number of freshman and sophomore education students gained pre-teaching experience. With their guidance, the children had no difficulty learning to use the typewriters. Toward the end of the experiment, the typists had begun to increase their speed.

The chief investigator is preparing to write an article for publication concerning this project. In the future the idea may be proven feasible.

UNIVERSITY EDUCATION STUDENTS' UNDERSTANDING OF THE NATURE AND PROCESSES OF SCIENCE

Investigator: Roger L. Wood
Wisconsin State University - Stevens Point
Local Project No. 51

It has long been recognized that those who teach science in our schools should have a thorough understanding of science concepts. The processes of science have often been given less attention. The investigation described here sought to appraise the understanding that teachers in training have of science and the processes of science. The subjects of the study were 443 elementary and secondary "teachers-in-training" at five Wisconsin State Universities: Eau Claire, La Crosse, Oshkosh, Platteville, and Stevens Point. The instrument used to appraise these understandings was the Wisconsin Inventory of Science Processes (WISP), developed at the University of Wisconsin Scientific Literacy Research Center. The instrument contains 93 statements concerned with assumptions, activities, objectives, and products of science.

Following are some basic statistics based on the inventory scores. The raw scores ranged from 45 to 81, with a mean of nearly 66. Students in secondary education averaged highest. A modest but significant correlation of .266 exists between WISP score and average university science grade. Item by item, the per cent of correct responses ranged from 32.6% for item 2 to 98.2% for items 79 and 93 of the Inventory, showing a wide range of difficulty. The investigator concludes that three of the areas of science processes are generally well understood by more than 90 per cent of the students: scientific observations, experimentation, and communication of scientific knowledge.

Item analysis has helped to point out the processes questions which show general lack of understanding on the part of many students. Some implications of the study are:

1. Many prospective science teachers may find it difficult to teach science according to the modern philosophy which stresses the nature and processes of science. Further study will show better the adequacy of teachers now being educated and those already in the field.
2. The student's understanding of the nature and processes of science may not be a product of university science courses. Perhaps these science courses need to focus more upon the nature and processes of science, if we expect our future teachers to possess this knowledge.
3. One of the prime objectives of the science techniques courses might be to focus upon the nature and processes of science in relationship to the teaching of science to elementary and secondary students.

The impact of this investigation will be measured largely in the extent that it produces a change in preparation of science teachers, and in improved science teaching by those teachers. The investigator has already revised his science methods teaching to improve student teacher understanding of science processes. He is conducting follow-up to see if at the end of the science methods course his students have gained the proficiencies needed. Attention is being focused on the need to blend the learning of science concepts with understanding of the nature and processes of science.

The necessary impact of this study will no doubt come about to the extent that it gains the attention of those who are preparing science teachers. With this point in mind, Mr. Wood has submitted a report of the research to the Journal of Research and Science Teaching for publication. He has also dispatched copies of his final CORD report to science methods instructors at cooperating institutions within the state.

OBSERVATIONS OF ACADEMIC PERFORMANCE BY LOW ACHIEVING COLLEGE FRESHMEN FOLLOWING INSTRUCTION BY ACADEMICALLY SUCCESSFUL STUDENTS TRAINED TO TEACH READING AND STUDY SKILL TECHNIQUES

Investigator: Donald A. Benz
Wisconsin State University-Stevens Point
Local Project No. 2

On every university campus there are students who attempt to be educationally successful while lacking performance skills which enhance learning. The Stevens Point campus is no exception. On this campus, as on many others, it is recognized that reading is a key performance skill. Lack of reading ability contributes to the high attrition rate of freshmen at universities. While some institutions have attempted to teach reading skills to sizeable groups of students, the Stevens Point investigator established a plan to provide individual instruction by academically successful students specially prepared for this kind of assistance.

The twelve students chosen to be instructors were second semester juniors who had a B average or higher. The experimental and control groups were chosen from freshmen who had the following characteristics:

1. low percentile rank in high school graduating class
2. composite ACT percentile ranks generally between 13 and 34
3. first semester grade point ratio between .75 and 1.59
4. high school grades for senior year averaging C- to C+.
5. second semester freshman

The student instructors devoted their time to sessions with the experimental group students on how to study how to take notes, how to write, more effective reading, and related topics.

Academic performance of experimental and control groups after the experimental group had received instruction was compared with that of the first semester. No evidence was found that the work of student instructors with the experimental group produced better academic performance. Nor did the control group, receiving no instruction, show any improvement.

Mr. Benz has found out that the "each one teach one" method of helping high risk university freshmen does not work, even though the project was carefully planned and well executed. The value and impact of this study lies in the questions he has raised that can and should be answered. Would a different kind of program be more effective? Is it feasible to have the best students as student instructors, or should the teaching be done by students who came up the hard way? Should more time have been devoted to teaching the student instructors the techniques with students? Did the program fail, or are the requirements for students of this calibre so difficult that only a small percentage of them can succeed? Do all of the criterion factors identifying high risk students, taken in combination, suggest that an average student in high school cannot be an average student in college?

Further research is needed to learn how many such high risk students there have been, in recent years, in this and other universities, and what has happened to them. Of the 24 students comprising the experimental and control groups in this study, nineteen were identified as failures, three could continue on probation, and two were identified as being in good standing.

There are many kinds of skills that the "high risk" students need to learn, and many of these have been identified by the researcher. But he then comments as follows: "Learning the techniques of learning is in itself a difficult task, but it is perhaps not as difficult as it is for the individual to develop such characteristics .... as perseverence, desire, self-deprivation, interest, thoroughness, creativeness, stamina, and ability to spend many hours studying." Mr. Benz then points out that admission of high risk students to college should be undertaken only to the extent that the institution is willing or able to commit its resources helping them.

If enough of us ponder these questions, the Benz study will have important impact.

A FEASIBILITY STUDY TO DETERMINE THE POSSIBILITY OF TEACHING FRESHMAN COMPOSITION AND RHETORIC WITH A PROGRAMMED TEXT

Investigator: William D. Lutz
Wisconsin State University-Stevens Point
Local Project No. 29

With the growing numbers of freshmen students on most college campuses, there is an increasing concern about the methods being used to teach composition in freshman English courses. Several CORD-sponsored research projects have been directed toward the teaching of freshman composition courses. The project described here is one of them.

Like numerous other projects concerned with freshman composition, this project was directed at finding ways to efficiently teach more students how to write with the same investment of instructor time. Since the only way to learn how to write is to write, the instructor of freshman English must of necessity assign and read large amounts of student writing. The student then receives a corrective feedback from the instructor and can incorporate the corrections and suggestions for improvement into his writing. The main problem in restructuring freshman English is how to keep the necessary interaction between instructor and student while at the same time enlarging the number of students an instructor can adequately teach.

Since programmed learning allows a student to proceed at his own rate while receiving immediate corrective feedback, use of a programmed text might free the instructor to deal with students individually; he would not have to spend so much time pointing out corrections in what the student has written.

The pivotal question of the research is, will use of a programmed text reduce the number of hours an instructor must spend in teaching the composition course, when student enrollment is held constant? This investigation must be thought of as a pilot study to see if further and more extensive trial of the use of programmed texts is feasible. Thus the research is limited in scope.

To answer this pivotal question, two sections of English I were randomly selected from the class schedule. The investigator used a standard handbook to structure student work in Class A, and a programmed composition text for Class B. The two classes used the same syllabus and wrote the same number of themes. The two texts dictated the approach and direction of the writing assignments in the course. The instructor kept a record of the number of hours spent with each class during the semester. He spent 174.4 hours with Class A, and 216.5 hours with class B. This means that he spent 24.1 per cent more time with the class using the programmed textbook than with the class using the standard composition handbook. His conclusion is that it would not be fruitful to undertake a full scale study using programmed textbooks, since their use clearly requires more instructor time per class instead of less time. Use of programmed texts require smaller classes rather than larger classes.

One impact of this research is that it tends to discourage the use of programmed textbooks in teaching freshman composition. Perhaps more important are the insights obtained concerning why more time is needed when the programmed text is used. Programmed College Composition, the text used, provided sample answers to go with written assignments. Student answers usually varied greatly from the sample answers given. Students felt that the instructor should at least read each theme, and they sought the instructor's comments, especially because the student writings were uniquely different from each other and from the textbook sample response. It was necessary for the instructor to spend a certain amount of time with each student in spite of the use of the programmed textbook. In composition courses, there appears to be no substitute for direct communication between instructor and student for most kinds of writing undertaken.

A STUDY OF THE EFFECTIVENESS OF SELECTED REGISTRATION DATA IN PREDICTING STUDENT SUCCESS IN THE BEGINNING SPEECH COURSE

Investigator: Frank T. Alusow
Wisconsin State University-Stevens Point
Local Project No. 11

In the 1960's, the tidal wave of students inundated nearly every academic department of higher education. Departments of Speech or Communication were no exception. It was inevitable that at WSU-Stevens Point, where freshmen were required to take a 2 credit speech course, the tidal wave would be felt in the Department of Speech. For every 120 new freshman students it was necessary to add one more instructor for Speech 1 alone, and even then many students did not fulfill their speech requirements until the senior year. Out of this dilemna came the following questions: Do all college students really need a basic course in speech? Are there predictors for the quality of Speech 1 work that will foretell accurately how well students will do? Can some superior students be identified who need not take Speech 1, or who should have a somewhat different speech curriculum?

The investigation concerned 709 speech students of 12 different speech instructors. The predictive variables studies were high school percentile rank, ACT English and Cumulative scores, high school forensic and debate experience, high school speech grades, and academic major, all of which were related to Speech 1 grades. The data were presented in two way contingency tables, and the chi-square analysis was used to test the independence of the variables.

As might be expected, high school percentile rank was one of the best predictors of Speech 1 success, and ACT scores also had some value. High school forensic and debate experience is related positively to college speech achievement. There is a strong positive relationship between high school and college speech grades, but academic major appears to have little predictability.

Mr. Alusow concludes that the investigation provides some important basic information which may serve as guide-lines for the future. The University can provide better speech instruction by advanced placement, exemption, and selective registration in the introductory speech course. All of this can be done economically. The impact of this study will be chiefly the restructuring and improving of the introductory speech course at WSU-Stevens Point, and the new structure may become a model for other departments of speech to use.

ATTITUDE CHANGE IN PRE-STUDENT TEACHING EXPERIENCE

Investigator: A. Irene Gray
Wisconsin State University-Stevens Point
Local Project No. 17

How does it feel to dive into the lake when the temperature of the water is below 60 degrees? That's the way some teachers feel when they step suddenly into student teaching without any prior experience. It is often quite a shock. In order to lessen the shock of a sudden plunge into student teaching, some teachers advocate a micro-teaching experience. This micro-teaching experience was the focus of Irene Gray's research. She tested the hypothesis that teachers profit by actual teaching experience during the learning of new or improved theory or teaching techniques in oral language.

The introduction of linguistics into the language arts curriculum has created a demand for teachers concepts, especially to disadvantaged children. The question is, does the actual teaching experience, incorporated into the techniques course, help produce better prepared teachers?

The subjects of the experiment were 85 college students enrolled in the fall quarter of 1968, in "Speech in the Elementary School" at the University of Illinois at Chicago Circle (Group I), and a similar group of 78 students enrolled during the winter quarter (Group II).* The teaching experiences could be video taped and also observed through one-way glass windows and sound amplifiers. Each teaching session was carefully evaluated, and each student had at least two teaching opportunities.

Success of the teaching experiences was measured in terms of a pre-post-Attitude Scale developed by Dr. Beverly Lusty and Associates for Inner City teachers. The significance of shifts in attitude was determined by the interlocutory traumatic test.

The contrast in findings between those who had pre-student teaching experience and those who had not was startling. Group I, which lacked the teaching experiences, showed little change in attitude. Group II showed a positive shift in attitude toward a recognized need for preparation and efficiency, more sincerity and friendliness, increased respect for colleagues, and a more positive view of inner core children. The investigator concludes that the brief student teaching experiences help prepare them for actual teaching and improve their attitudes toward the needed preparation for teaching.

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*Group I students devoted their time to role-playing and Group II were given pre-student micro-teaching experience with children.

The chief impact of this study is to reinforce the belief that a role of the laboratory school is to provide pre-student teaching experience with children. This finding coincides with the findings of the La Crosse investigations which are described elsewhere.

The investigator is putting into practice what she has learned. Her language arts section of Teachers of the '70's at Stevens Point this summer are obtaining teaching experiences with children, rather than just observing. At the end of the micro-teaching experiences, the adults and children are discussing the experiences: what they liked best, and why. The teachers are analyzing what makes a good student and a good group participant.

The investigator is preparing to help provide micro-teaching experiences at the laboratory school for those preparing to teach other subjects than speech. She is planning to put in writing what she has learned so that it can be published in a professional journal.

A PILOT STUDY ON THE USE OF SMALL-GROUP DISCUSSION IN A MATHEMATICS COURSE FOR PRESERVICE ELEMENTARY SCHOOL TEACHERS

Investigator: Henry Howard Thoyre
Wisconsin State University-Stevens Point
Local Project No. 44

"We teach children, not subject matter," the progressive educators were fond of saying. The old argument of method vs. content has been neatly resolved by Mr. Thoyre, who has found a way to combine the two so that you cannot tell which is which. The investigator sought an answer to the question, "Can a mathematics class of pre-service elementary teachers working in small groups examine all of the course content normally included in a class taught by lecture-class discussion technique without sacrificing overall course achievement?"

Two classes of pre-service elementary school teachers were enrolled in Mathematics 115, a four-credit mathematics course required of all elementary education majors at Wisconsin State University-Stevens Point in the spring semester, 1969. These two classes of 23 and 27 students were taught by the same instructor. The control group class period time was divided so as to use about 30 per cent of the time for lecture and the rest for instructor-led class discussion of topics introduced in the lecture and development of new concepts. The experimental group's time was divided so as to allow the first ten minutes for the instructor to speak, followed by thirty minutes of small-group discussion of concepts related to the lecture and new material, in which no direct assistance was given by the instructor. The last ten minutes of the period was discussion by the class as a whole of topics and problems encountered by the discussion groups.

Performances of the two groups were evaluated and compared on four types of measures: computational skills, achievement on examination of independent reading ability in mathematics, attitudes toward mathematics and overall course achievement. Through statistical computation and analyses of covariance the investigator learned that the experimental group mean score for each criterion was higher than that of the control group, but not significant at the .05 level; that the two groups read about the same amount of mathematical material; and that the experimental section were more inclined to believe that their attitude toward mathematics had been enhanced over the semester than did students of the control group. Small discussion groups of 3 and 4 students were equally effective.

The investigator is enthusiastic about some of the findings. He is confident that he can in the future combine the content and methods courses, using the small group discussion procedures of the experimental group. Students who are exposed to this method gain confidence, and the class is very informed. Laboratory experiences can be worked into this type of class. In the coming school year, the investigator will experiment with the combined content-methods course.

Mr. Thoyre will submit a summary of research, which is a doctoral dissertation, to the Research Journal of Mathematics Education. The impact of the study is a new approach to the learning and teaching of mathematics for elementary school teachers.

The Ripple at WSU-Stout

Stout State University has a unique function in the higher education of Wisconsin. Located at Menomonie, Wisconsin, this institution enrolled somewhat more than 4,900 students in the fall of 1969. Stout has long been renowned for its special programs preparing teachers of vocational subjects and home economics for the schools of Wisconsin. Stout State University has for some time past maintained graduate programs at the master's level for these teachers. A relatively large proportion of the students have come from outside the state of Wisconsin. Because of emphasis on vocational study, Stout has attracted a student body that is somewhat atypical of higher education in general. Also because of the nature of its offering, Stout has attracted a staff of specialists in various fields of vocational education.

The CORD coordinator at Stout State University was originally Dr. John Furlong, Director of Planning and Development, who still keeps in close touch with the program. He was replaced while overseas in 1967 by Dr. Donald Clausen. Since that time, the work of coordinating CORD activities has been carried by Mr. Ray Szymanski.

The following pages provide brief summaries of the CORD-sponsored teaching-learning research at Stout State University.

THE DEVELOPMENT OF CONTEMPORARY MATHEMATICS BY CLOSED CIRCUIT TELEVISION

Investigator: Eino E. Maki
Wisconsin State University-Stout
Local Project No. 30

Mr. Maki and to some extent other staff members of the Department of Mathematics at Stout State University, have been concerned with improving pre-calculus mathematics instruction for students entering that institution. Before this research was instituted, about 50 per cent of the freshmen went on probation by the end of the freshman year. The department offered a four-track mathematics system, but found difficulty in directing students into the right track. The objectives of the department were to provide a no-track mathematics offering, to increase the rigor of the courses, and through better instruction, to decrease the number of failures. These objectives appear to have been achieved. A full year course in pre-calculus mathematics has been developed using closed circuit television to be used with lectures and individual help where needed to enrich the mathematics curriculum.

The federal grant funds were used to develop tapes which could be played over closed circuit television for a semester course in introductory college mathematics. The project constituted a feasibility study. When the use of the tapes was justified, the university then used its resources to develop a complete two-semester course. The university has carried 90 to 95 per cent of the cost of this total production.

The impact of the Maki experiment cannot be fully realized at this time. The mathematics staff has turned its attention to examining its purposes and teaching practice. The chief investigator has gained considerable insight into methods of student learning. The finished product and the TV tape have been copyrighted jointly by the university and Mr. Maki. Mr. Maki has copyrighted the written material. A number of publishing houses are examining it for possible publication.

Both teachers and students have continually participated in the availing process. Each tape has been reviewed and revised. The feedback of students has provided much insight into what constitutes good teaching.

Indirectly, the mathematics project has greatly increased the closed circuit TV production capabilities at Stout State University. They have employed a graphic artist and procured much equipment needed in television production.

The insights and experience of the television staff obtained from the mathematics projects will carry over into future television programs.

SURVEY FOR COMPARISON OF EFFECTIVENESS OF HOME MANAGEMENT WITH RESIDENCY VERSUS HOME MANAGEMENT WITHOUT RESIDENCY LABORATORY

1966-1968

Investigator: Dorothy F. Dunn
Wisconsin State University-Stout
Local Project No. 15

Home economics students at Stout State University have had the choice of a residency period in a home management house, where cooperative planning and living for a period of time became part of the home management experience. Somewhat fewer than half of the home economics majors chose this experience, but the increase in the number of majors forced the department to devote less and less time to residency experience of each group of six students. This in turn crowded the learning schedule of residents, so that residency became a very strenuous experience.

In order to determine the views in retrospect of home economics education graduates, the investigators sent a carefully prepared questionnaire to all graduates of 1966, 1967 and 1968. About half of them responded, with residency graduates comprising 40 per cent. Some 85 per cent of those who had chosen home management residency would do so again, and 60 per cent of those who had not chosen residency would make the same choice again. The reasons for the choices, and other comments, constitute a fine evaluation of residency for the home economics staff. Some students found the residency experience too formal and too strenuous. The experiences were packed into too short a time. However, it is significant that the great majority of students who experienced home residency would do so again. For some who did not choose residency, the reasons are understandable: marriage, cost and part time employment. The 40 per cent not residents who would choose to be residents if the choice were to be made again thought they would learn more, obtain discipline, and gain practical insight from living in the home management house.

The detailed study of curriculum objectives show conclusively that resident students tended to rate the various experiences "very helpful" and "most helpful" far more often than did non-residents. The detailed study showed how the curriculum could be improved.

The value of residency in a home management house is strongly supported for some home economics education students, particularly those who do not obtain the needed experiences elsewhere. It is valuable to have the young women establish their own set of rules and then see if they can live by them. Lack of space and budget have clearly hampered the breadth and effectiveness of home residency experience.

The impact of this study will depend largely on the extent that others may learn from the research just completed. The findings are laid out with great care and detail. In the opinion of the author, others can learn a great deal from this study conducted at Stout State University.

AN INVESTIGATION OF THE COGNITIVE AND AFFECTIVE DOMAINS OF STUDENTS STUDYING CHILD DEVELOPMENT

Investigators: Henry E. Draper and Mary Wanda Vansickle
Wisconsin State University-Stout
Local Project No. 12

It is fitting that a Department of Child Development and Family Life should concern itself with basic elements of learning. Two Child Development Department members at Stout State University designed a three-phase study to relate cognitive and affective domain learning of students of child development, and to relate both measures to course grades and grade point ratios of these same students. Students of measurement usually think of the three domains of learning: cognitive, affective, and psychomotor skills, as having zero correlation with each other. Draper and Vansickle questioned whether better cognitive learning might produce better attitudes (affective learning). Their initial purpose was to improve a class in child development. The result was not only to accomplish this, but to contribute to the scaling and measurement of learning and to our understanding of interrelationships of measures of learning.

Draper and Vansickle developed an instrument called the DV-Child Development Inventory which is in the process of being copyrighted. It is a seven-scale test designed to measure understanding of the following aspects of child development: language development, motor development, physical development, problem solving, sensory perception, prenatal development, and self concept.

The research was conducted in three phases. Phase one was a study of relationships among student competencies as determined by cognitive learning and affective domain learning in child development, course grade, and grade point ratio. Phase two tested the hypothesis that students enrolled in Child Development I will reflect significantly favorable changes in attitude toward children over a period of one semester. Phase three tested the hypothesis that students experiencing observation while engaged in the Child Development I course will have a more favorable change in attitudes toward children than students in the course without the observation experience (control).

The findings of the research supported the hypothesis that student performance in a child development course can be predicted from the DV-Child Development Inventory. Significant positive correlations occurred between the course grade and DV-CDI, the DV-CDI and the grade point ratio, and the Inventory of Attitudes on Child Guidance and course grades. The findings supported the hypothesis that a cognitively oriented course would have a significant influence on changing student attitudes of the class as a whole when pre-test and post-test scores are compared. The data did not support the hypothesis that students observing children while studying child development would have a significantly more favorable change in attitudes than other students in the courses who lacked the opportunity to observe children.

The impact of the research just described has been quite far reaching. There is a rapidly increasing enrollment in the Department of Child Development and Family Life. The research necessitated a thorough examination of course objectives and curriculum. The production of the Draper-Vansickle Child Development Inventory is a major accomplishment, since it is an instrument that will be continually useful in such departments. The basic course in child development has been further validated, for the research showed that the 100 subjects of the experiment did have significantly more favorable attitudes concerning child guidance after taking the course. Observations of children by students enrolled in Child Development I have not been incorporated in the curriculum. The course has been organized for planned small group observations. As a result of the study, the course has been changed in various types.

This research has given valuable experience to four graduate assistants who participated in the laboratory work. The study has indirectly pointed to various needed investigations.

Finally, the research has opened the way for a significant grant from the Office of Economic Opportunity to the researchers who conducted this investigation. Part of the OEO funds will be used in working with Chippewa Indians.

THE EFFECTIVENESS OF A REMEDIAL COURSE IN ENGLISH COMPOSITION FOR FRESHMEN AT STOUT STATE UNIVERSITY

Investigator: John B. Tokheim
Wisconsin State University-Stout
Local Project No. 45

The high mortality rate of college freshmen in many institutions is usually caused in part by inability to do college level writing. At Stout State University, this fact has been recognized for some time. The Tokheim study is an attempt to do something about the dropout problem. Although an analytic study of the causes of student failures would eventually be most useful, practical considerations made it advisable to move at once to the use of a remedial non-credit English course. The very presence of numerous marginal students in standard freshman composition courses is detrimental to learning.

Experimentally, all entering freshmen whose ACT English standard scores were 15 or lower were placed in a non-credit, remedial, pass-fail course. While many of them objected to taking the course, the majority later acknowledged that the course was helpful. The course was designed to give basic preparation in learning to write, emphasizing such elements as sentence structure and types, punctuation, paragraph development, parts of speech, theme unity, and recognition of the student's own deficiencies in writing.

The later success of students who successfully completed the course was encouraging. Whereas 73 per cent passed the remedial courses, 92 per cent of those entering regular freshman composition survived - a much higher per cent than if they had entered the course before taking remedial work. In addition, 97 per cent of those who got as far as the second semester freshman composition course were able to pass. The per cent of passes and failures now tends to remain constant.

An important outcome of the experiment is the careful study of composition curriculum, evidenced in the course outlines of both the regular and the remedial composition courses. This has been good for the Department of English. The experiment has also helped increase the research know-how of the chief investigator, who sees many subjects of future exploration. These include:

a. follow-up to see the quality of work of remedial students in later course work in English, how many of the original group graduated from the university. This follow-up should include interviews to ascertain how remedial students appraise the remedial work.

b. A study to establish a profile of the remedial student.

c. A study to articulate high school and college English. There is need to identify college English remedial students while they are in high school.

d. A refinement of selection instruments for identifying remedial students.

e. A more sophisticated and sensitive device for grouping students according to ability. (Stout also has an honors program in freshman composition.)

f. A study to determine the feasibility of offering the remedial program in the summer, and requiring students who would be selected for such programs to take the course as a condition of admission.

g. A study of how best to influence high schools to do more and better preparation of students so they are not in the remedial category.

If these investigations are pursued thoroughly at Stout State University, the ripple of impact on English education could turn into a four-foot wave.

A SURVEY OF TRAINING NEEDS AND INTERNSHIPS FOR NON-TEACHING POSITIONS IN HOME ECONOMICS

Investigator: Dorothy F. Dunn
Wisconsin State University-Stout
Local Project No. 14

Where do undergraduate non-teaching home economics majors go after they graduate, and what do they do? This is the chief question to which the investigator sought answers from Stout State University graduates. The responses to a survey questionnaire were obtained from 294 home economists employed by 152 institutions in 27 states. About half of the respondents had broad home economics backgrounds with majors in general home economics or home economics education. These people held positions in the world of business, whereas their majors, home economics in business, were quite narrow and could be described as "food in business."

The respondents thought their education should have been broader, and should provide an understanding of the free enterprise economic system. They could have used work experience prior to graduation. This experience would have taught them the discipline of work, acceptance of responsibility, and how to plan and reason in logical sequence. They would also learn respect toward those in authority, and how to manage time, energy, and money.

The study reveals that there is an expanding role for home economists in the field of business. The respondents posed the kinds of capabilities they would seek for applicants in this kind of work: cooperativeness, dependability, initiative, resourcefulness, maturity, workmanship, diligence, loyalty, interest in self-improvement, ability to communicate, and logical approach to problems. Of course these are qualifications we have heard of many times before.

Inevitably, one impact is to provide broader preparation for home economists in business at Stout State University. The curriculum is being revised and improved. A "Renewal Cycle" has been worked out for continued improvement of the curriculum of home economics in business and industry, provision for student work experience, internships, and faculty and staff exchange. Opinions of those in the field will continue to provide feedback and thus to indicate trends and future needs.

A final impact is the realization that, whereas many home economists have in the past, landed in business by chance, many more will be entering business and industry in the future, and they need to be prepared for it. The study has provided many specific requirements for those entering various kinds of positions related to home economists preparation.

THE STUDY OF NON-VERBAL ACTION OF COUNSELEES

Investigator: John Duetscher
Wisconsin State University-Stout
Local Project No. 13

People talk about "reading between the lines," and those who do educational counseling write about it, but a researcher at Stout State University actually illustrates how it can be done. Dr. John Duetscher has studied the non-verbal action of counselees. Through a set of taped counseling sessions he demonstrates that the counselor can summarize accurately the composite message of the counselee, conveyed through verbal communication and non-verbal cues which accompany the verbal response. Mr. Duetscher identifies four kinds of clues: bodily clues, facial expressions, vocal cues, and personal appearance. He points out that the counselor cannot trust what he hears in words alone, nor can he be sure that his own behaviors give no clues to the counselee. The counselor must learn to watch for non-verbal cues of the counselee, and at the same time, guard against unintended clues he himself might give to the counselee.

Transcripts of ten illustrative tapes are presented in the researcher's report. The clients who are separately interviewed on the tapes are people of various ages from various walks of life. Their problems of concern are also diversified.

This research was done in connection with graduate work in counseling. The tapes are intended to be used as a teaching device for young counselors. Specifically, the tape illustrates vocal cues in non-verbal communication. The tape serves not only in illustrating implied meanings of counselees, but it also serves in evaluating how well the listener is able to interpret the implied findings.

The impact of the Duetscher study will be in the extent that it contributes to the learning of young counselors. It is learning experience that helps them to get started in effective counseling. Since the technique is new, it represents a possible significant improvement in counselor training. The device described in the report has actually been developed and is being put to use.

ASSESSMENT OF WORK NEEDS OF PROSPECTIVE TEACHERS-IN-TRAINING BY ANALYSIS OF THE MINNESOTA IMPORTANCE QUESTIONNAIRE

Investigator: Douglas D. Gingrich
Wisconsin State University-Stout
Local Project No. 16

The investigator undertook this study with the assumption that there are certain vocational needs teachers have which must be fulfilled if they are to be happy in their work. Since these needs may not be the same for men and women, it might be helpful not only to assess these needs, but to see how the needs of men and women teachers or prospective teachers might differ. The importance of assessing vocational needs of women as well as of men is painted out in a study showing that 68 per cent of women college graduates are working. It has been projected that in the near future, 75 per cent will be working.

The Minnesota Importance Questionnaire was used to assess the work needs of 94 men and women teachers in training at Stout State University. This instrument describes 20 choices or categories of work needs. Each need or choice category is paired with each other need and the respondent chooses the one he considers most important through random arrangement. The respondent also indicates "yes" or "no" when asked if each of the 20 needs is important in his ideal job. The chi-squared test was used to identify differences of men and women in the proportion of their "yes" and "no" responses to each need category.

Needs found to be most important to the subjects of this study were: ability utilization, achievement, creativity, social service, responsibility, and advancement, as measured by the Minnesota Importance Questionnaire. Men's needs that were of most important were: achievement, ability utilization, creativity, advancement, and social service in that order. Women chose ability utilization, achievement, social service, creativity and responsibility.

Needs that were identified by a significantly greater proportion of women than men are: activity, co-workers, independence, moral values, responsibility, and social service. A greater proportion of men than of women chose advancement, authority, recognition, security, and social status.

It is apparent that men and women teachers-in-training are not "equal" in work needs, if the sampling at Stout State University is representative. Since these needs may differ from time to time and from place to place, such studies as this one need to be used by vocational guidance counselors, the higher education instructional staff, and prospective teachers-in-training themselves in determining the most satisfactory vocational choice and vocational satisfaction.

Future investigations along this line might focus on research into the variables affecting responsiveness. An even more comprehensive picture of prospective teachers work needs might be obtained by a less structured instrument designed to elicit more freedom of expression and latitude of response. Also, a follow-up of the subjects of this study might be conducted with the same instrument to see if there was a later shift in need scores.

In summary, the chief impact of this investigation is that it has opened the door to better understanding and assessment of the work needs of teachers.

A COMPARISON OF VARIED TIME PERIODS OF MICROTEACHING IN THE DEVELOPMENT OF INTERPERSONAL RELATIONSHIPS IN TEACHING

Investigators: Mildred I. Turney, Marybelle Hickner
Wisconsin State University-Stout
Local Project No. 46

Somewhere, somehow, each would-be teacher has to get his (her) feet wet; that is, actually start teaching. The question is when, or under what conditions, should a teacher start teaching? At Stout State University, the investigators chose to experiment with micro-teaching: short, carefully planned teaching lessons for college juniors enrolled in an introductory course in education for home economics majors. The study was designed to ascertain the change in teacher-pupil interaction from teacher dominance to student involvement, based on the assumption that the more the student is involved in the learning activity, the more he will learn. The Flanders Interaction Analysis System was used for observation of the verbal behavior of sixty student teachers. Data were collected from video-taped lessons, and tabulations were recorded on a matrix for analysis.

The findings revealed that both the number of lessons taught, and the longer time period per lesson, brought significant change in behavior from teacher lecture and questions to student involvement in classroom situations. Other factors than time and number of lessons also influenced changes in student involvement. The lack of significant gain between lessons III and IV could be due to a change in age groups. After three lessons with one age group, the student teacher then had to teach a different age level.

Student teachers were able to view TV tapes of their teaching performance, and they could observe which teacher statements were a direct, and which an indirect, influence on student verbal behavior.

Because of inadequate funding, matrix analysis has not yet been made for all student teaching undertaken during the project. This analysis needs to be made.

In conclusion, micro-teaching has proven to be an excellent introductory teaching experience for teachers in training. They had a way to observe how much they talked and how much students talk; they could analyze their own acceptance of student feelings; and they learned how to teach lessons better. After a lesson had been taught, the student teacher could play back the video tape, and later teach the same lesson again to a different group.

As a result of the findings of the experiment, the number of lessons micro-taught has been increased. In the future there will be an attempt to get micro-teaching into the sophomore year. At present the teaching experience begins with micro-teaching followed later by practice teaching: three weeks at Menomonie High, followed by eight weeks of off-campus teaching.

In the future, several findings of the study will be explored more fully. The analysis can be pinpointed by the following questions: (1) Why did some students not profit from micro-teaching after the first lesson? (2) To what extent does the shift to a different age level require additional experience in order to obtain the proper degree of student-teacher interaction? (3) How successful will micro-teaching be if experienced in the sophomore year? (4) Is there empirical evidence that this kind of micro-teaching helps produce better prepared teachers? Answers to these questions will help determine the impact this experiment eventually will have on the educative processes.

A COMPARATIVE STUDY OF ATTITUDE DIFFERENCES OF STOUT STATE UNIVERSITY STUDENTS ENROLLED IN PRINCIPLES OF SECONDARY EDUCATION AND VETERAN TEACHERS

Investigators: Veryl E. Homuth, John C. Duetscher
Wisconsin State University-Stout
Local Project No. 22

In recent years, more and more attention is being paid to the attitudes of learners and teachers. Perhaps this is because of a conviction that attitudes are an end in themselves. Homuth and Duetscher were concerned with the attitudes of student teachers, and how they might change during a course in Principles of Secondary Education. The population studied was a group of 274 students enrolled as beginning students in Principles of Secondary Education at Stout State University. The attitudes of this group were compared with those of 240 of the same students at the end of the course, and with 84 veteran teachers who attended the 1968 summer session. The instrument used was a modification of the Minnesota Teacher Attitudes inventory.

The chi-squared test was used to detect significant differences in the responses among groups. Differences between responses of beginning students and veteran teachers were considered significant in all categories of responses. Comparing attitudes of students before and after taking Principles of Education, the researchers found all categories except pupil characteristics to contain significant shifts in attitude. The greatest shift appeared in the pupil-teacher relationship category in which 78.6 per cent of the items proved significant. Other categories, and the per cent significant in each, are as follows: teaching methods and activities, 64.0 per cent; teacher characteristics, 58.7 per cent; and professionalism, 53.3 per cent. Students who had completed the course in Principles of Education differed significantly from veteran teachers in attitude in only two categories.

The study has several important implications. Attitudes of students do actually change as a result of taking the Principles of Education course. The attitudes tend to move in the direction of those held by veteran teachers. In only two categories: pupil-teacher relationships and professionalism have they "not arrived." It is interesting to note that in the matter of professionalism, veteran teachers are not very much in agreement.

Such a course, then, "matures" student attitudes to become like those of veteran teachers. As an example of difference, reaction of students entering an education class differs at the .001 level from the reaction of veteran teachers in response to the statement, "Discipline seldom affects the learning process." If the responses of veteran teachers are "right," then the comparisons made in the study can point to some attitudes that would-be teachers need to learn.

As a result of the study, the new techniques now used in teaching the professional course have to some extent become validated. They are now being improved. It is immediately apparent that those teaching such courses in teacher education institutions need to be very close to what is going on in the schools. The investigators would like to see those who teach secondary education go back and work in secondary schools after being away from them for some time.

Several related studies might be conducted in the future. 1) It would be useful to compare attitudes of students entering college with their attitudes after they have completed practice teaching. 2) Using those statements from the inventory that proved significant, education professors might see what attitudes are changing in their students as the courses develop. 3) Professors in education courses could make students aware of the more realistic views. They may want to construct their course objectives along lines that will help their students develop an awareness of these attitudes. 4) A longitudinal study of how teachers' attitudes change while they are in the field might give additional insights.

The impact of the Homuth-Duetscher study could be continued if these investigations are pursued.

THE DEVELOPMENT OF A SERIES OF VIDEO TAPED COUNSELING SESSIONS

Investigator: Evelyn G. Rimel
Wisconsin State University-Stout
Local Project No. 37

Teaching beginning counselors how to counsel has been one of the more complex and challenging issues facing counselor education. Since counselors are not technicians, but communication artists, it must be determined how they can most effectively be taught to relax and become skilled in their attending behavior in carrying on the counseling process.

The investigator tried video taping numerous counseling sessions of counselors - sessions which might reflect desirable attending behavior: listening, understanding symbolic behavior, and reflecting the "meanings behind the words" in counseling situations. Significant kinds of counseling situations were edited from the video tapes, and used to demonstrate important principles to beginning counselors. The video tapes were obtained after numerous attempts to overcome such problems as accurate reproducing of counseling dialog and sensing the feelings of the counselee.

Four hundred 20-minute video taped practice counseling sessions were recorded during micro-counseling sessions of the course in Supervised Counseling Practicum. From these tapes, a number of one-half inch tapes were made and are being used as part of the counseling library. The tapes present a variety of valuable learning situations. For example, one video tape carries an example of three counselors in different training groups carrying on a get-acquainted session with the same veteran counselee. These quite different sessions demonstrate the true uniqueness of the interpersonal relationship which develops between a counselor and a counselee, and also illustrates the extent to which beginning counselors tend to project their own feelings and philosophy of living, and thereby color the ongoing moment-by-moment interaction, both verbally and non-verbally transmitted.

The impact of video tapes thus produced on students who are learning to be counselors should be favorable. Perhaps most important is the manner in which such tapes help bridge the gap between theory and practice for those who are learning to be counselors. In time, a complete evaluation of the effects of these video tapes on beginning counselors will be possible.

The Ripple at WSU-Whitewater

Wisconsin State University-Whitewater is a rapidly growing institution located in the thickly populated industrial area of Southeastern Wisconsin. Like the other State Universities, its function has in the past been one that specializes in the preparation of teachers, especially those teaching business and commercial subjects. The non-teaching majors are now rapidly becoming more prominent, and business administration has become an important major. The 1969 fall enrollment at Whitewater was approximately 9,700 students.

Dr. Charles Graham became Whitewater Coordinator for WSU-CORD at the time of its organization in 1966. After about a year at this post he turned his responsibilities over to Dr. Warren Armstrong. For the past two years, Dr. Patrick Monahan has coordinated the consortium research activities on the Whitewater campus.

The following reports are those completed on the Whitewater campus, and for which final reports have been received at the time the impact report was written.

HIGH SCHOOL PLANE GEOMETRY THROUGH TRANSFORMATIONS: AN EXPLORATORY STUDY

Investigator: Alton T. Olson
Wisconsin State University-Whitewater
Local Project No. 33

Educators are constantly in search of better ways of teaching mathematics. Specifically, Mr. Olson has experimented with the development of a high school plane geometry course based strictly on transformations. It was necessary to develop certain topics which were part of the transformational approach to plane geometry but which are not recognized as results of traditional geometry. The writing of the course materials included the expository material, selected theorums and their proofs, and an item pool for home assignments and for tests.

After the course was written, it was necessary to orient teachers in this type of instruction. The course was then taught to eight sections of classes in three high schools.

The final all-important step, evaluation of the course, has just been completed, and at this writing the summary has been written and published. The findings are available in table form as well as in generalized form. Data from teachers were obtained in the form of a daily log, giving student reactions and their own observations. Data from students consisted of (1) scores on tests of achievement, and (2) a student opinionnaire as to their comprehension of and interest in the course. Group differences were tested through analyses of covariance.

Some of the findings may appear startling, but when one reflects on them, their logic appears evident. Only the high level students did well on the course work using transformations. Average and below average students found the transformation course too difficult, even though apparently well taught. Mr. Olson concludes that the course is a good approach for superior students but not for others, as presently constituded.

The investigator has subjected the post-test scores to two-way analysis of covariance; by I.Q. quartile, by sex and by mathematics grade. He has removed the pretest score predictive variance before analyzing residual variance by each pair of categories. One way analyses also are made by classes and teacher variables. Student opinionnaire responses also were analyzed, and differences observed by school which may be attributable to differences in ability level.

Mr. Olson found that girls did better than boys on the mathematics tests in the lower three I.Q. quartiles, while boys in the upper quartile excelled. He has also found that the test scores have a strong association with previous mathematics grades.

The chief impact of the investigation is the interest created in new approaches to teaching plane geometry. The investigator has taught high school mathematics, and he has learned a great deal about writing high school course materials, particularly because of his analyses item by item and test by test. He sees various ways of improving his presentations. Indeed, it looks as if the CORD grant has launched him on his way to being a writer of down-to-earth high school mathematics teaching materials.

EFFECTS OF INSTRUCTIONAL MEDIA IN TEACHING BEGINNING STATISTICS IN A TEACHER EDUCATION PROGRAM

Investigator: Alfred S. Kolmos
Wisconsin State University-Whitewater
Local Project No. 28

The use of slides and taped communications that will assist the student in teaching himself is now not unusual; in fact it is a common practice. Still, each use of such audio-visual aids in teaching needs to be developed and validated on an individual basis. The approach to individualized instruction that is described here concerns the teaching of elementary statistical methods.

Mr. Kolmos tested the use of four teaching methods: use of taped materials in carrels, carrel instruction supplemented by laboratory sessions, instruction through the use of 35 mm slides in the classroom with the instructor adhering closely to taped material used in the carrels, and the traditional lecture-discussion approach to teaching. A test developed by Dr. Robert E. Stake, Professor of Educational Psychology, University of Illinois, was administered to all four groups to determine the extent of their equivalence in ability or general achievement. No significant differences were found.

The mean scores on an achievement test covering the course were submitted to analysis of variance, and three of the four groups had almost identical means. The group using only taped materials in carrels averaged significantly lower than the other three. The investigator concludes that: (1) additional time devoted to the study of the subject matter will aid in achieving objectives;

(2) the greater the amount of time spent in student-instructor confrontation and interaction, the more likely that students will attain desired objectives; (3) less time devoted to the study of subject matter can be compensated for by insuring a greater amount of time spent in student instructor interaction; (4) achievement restricted to a self-instructional carrel approach is not as effective as the traditional lecture-discussion approach to teaching and learning; (5) the mere utilization of 35 mm slides in a traditional classroom setting does not guarantee increased achievement; and (6) it appears possible that a classroom teacher, following pre-determined objectives and content, can construct a self-instructional program which will result in as much student achievement as his more traditional classroom approach, especially if the course objectives are primarily concerned with the dissemination of data.

Some impacts of the investigation are evident in the process of conducting it. It was necessary for the instructor to consider carefully the objectives of his course, and then to prepare a curriculum to teach in various ways, in terms of the objectives. This is valuable experience at any level. Since the subjects were themselves teachers in training, some of them had the experience of learning by something other than traditional teaching methods. The investigator points to the need for more empirical research concerning the value of multi-media approaches to teaching.

Mr. Kolmos has profited from his experiments. He realizes that in a good learning situation there must be feedback and teacher-student interaction; also that audio-tutorial teaching is good, but it cannot cover all learning. He will continue his experiments when permanent equipment is available.

TESTING AND FEASIBILITY OF OFFERING A VOLUNTARY NON-CREDIT AUDIO-TUTORIAL COURSE IN LISTENING SKILLS

Investigators: John S. Cease, Leroy D. Haley
Wisconsin State University-Whitewater
Local Project No. 6

The purpose of this investigation must be noted in the context of the 1968-69 school year at Whitewater. The English Department at WSU-Whitewater had just put into operation a Writing Laboratory, using CORD funds. Frequently students were referred to this laboratory for aid in taking notes on lectures. The investigators were convinced meeting needs of these students called for a self-administrable program aimed at the development of better listening skills. They drew up a list of student needs concerning listening skills:

1. The need to be able to select major ideas from supportive and/or explanatory materials.
2. The need to be able to determine the central idea and/or theme of a given lecture.
3. The need to be able to understand organizational patterns relative to informative discourse.
4. The need to be able to determine differences in motive appeals.
5. The need to be able to determine the differences in style and language of informative discourse.

As a basis for their research, the investigators chose to test the usefulness of Ella E. Erway's audio-tutorial: Listening: A Programmed Approach (McGraw-Hill, 1969). This test was chosen for practical purposes. However, its use had not then been full validated. The purpose of the study was to determine the feasibility of offering, on a voluntary, no credit basis, a programmed audio-tutorial instruction approach to the listening skills, and to determine the extent to which these materials meet the listening needs of students.

Two groups of largely randomly selected volunteer students were selected from summer classes, who took pre-tests and post-tests on the listening skills. Since ACT scores were the basis of determining comparability of the groups, students having no ACT scores could not be used. The experimental group received six units of audio-tutorial instruction in listening skills, while the control group received no such instruction. A language which provided a carrel and a headset for each student was used for the audio-tutorial instruction. Faculty-student contacts were made in small groups of 5 to 7 students. The students individually recorded their own progress through the units.

Statistical analysis of findings indicated that the experimental and control groups were indeed well matched, as determined by comparing previous grades and ACT scores. The control group showed no significant gain in listening skill, as determined by comparison of the pre-test scores. On the other hand, the experimental group made highly significant gains, as indicated by a T value of 6.706, obtained by a test of difference in pre-test and post-test means. When the gains of the experimental and the control groups were compared, the experimental group clearly made the more significant gains. The investigators conclude that the units of audio-tutorial instruction received by the experimental group probably accounted for the difference.. The eagerness of students to enroll in this instruction, and their tendency to stay with it, speak well for the relevance of the Erway approach to listening skills.

The investigators point to further needed investigations, none of which have yet been pursued, partly because of shifts in departmental responsibilities. Some parts of the Erway materials need to be rewritten and the directions clarified. The experiment needs to be repeated, using larger numbers of students, including high and low achievers. It might be advisable to use the entire freshman class and to observe their later performance in college work on the basis of whether they did or did not receive instructions in the listening skills. The Erway and other units can form the basis for a sound program of compensatory education. The impact of this investigation will be determined by the extent to which this needed research is pursued.

ENVIRONMENTAL FACTORS THAT INFLUENCE ACHIEVEMENT IN A READING IMPROVEMENT PROGRAM

Investigator: M. Hope Underwood
Wisconsin State University-Whitewater
Local Project No. 47

Research has shown that factors other than cognitive variables are related to success in remedial instruction. Yet most reading training programs continue to concentrate on development of cognitive or thinking skills. The purpose of the Underwood investigation was to develop techniques for examining the influence of environmental factors on achievement in a reading program and to develop methods for incorporating these techniques into a training program for reading specialists.

The specific objectives for this project were:

(1) To survey the literature and select environmental factors relevant to success in reading.

(2) To select instruments for measuring these factors.

(3) To investigate means to incorporate these techniques into the training program for graduate students in the Master of Science in Education - Reading program at Wisconsin State University-Whitewater. The non-cognitive factors finally chosen for study were self-concept, parental attitudes, and overt classroom behavior of children, ages seven to twelve.

The investigator studied the research on numerous instruments for measuring the above named variables and selected the following for use: (A) The Parent Attitude Research Instrument (PARI), for measuring parental behavior and attitudes; (B) A Parent Interview Form based on one developed by Otto and McMenemy, to secure data from the parents on the child's health and physical development, educational data, and data on selected parental characteristics; (C) Self-Esteem Inventory (SEI) for measuring a characteristic described as "a personal judgment of worthiness that is expressed in the attitudes the individual holds toward himself" (from Coppersmith); (D) Soares and Soares Self-Concept Instrument; and (E) Children's Behavior Questionnaire, designed to identify children ages 7 to 13 who are "neurotic" or "antisocial."

Criteria for satisfactory instruments were defined as: (1) reasonable time to complete (20 minutes or less); (2) could children and parents understand them? (3) could graduate students enrolled in a reading program be taught to administer them? (4) Did they produce the kinds of information we were looking for?

A careful review of each instrument named above, and experimentation with its use by graduate students, have identified limits within which each instrument may be useful for identifying environmental characteristics of remedial children. It has been demonstrated that the instruments described here can be used in a Summer Practicum of a reading program to point out the significance of environmental factors' influence upon the reading process. In the summer of 1970 these factors will be explored in the Practicum, for the purpose of gaining immediate insight into non-cognitive variables and demonstrating how educational problems are best met with a team approach.

One of the most significant outcomes of this study is the evidence that experienced teachers enrolled in a Master's Degree program who were eventually to work with children from educationally disadvantaged backgrounds lacked insight into the problems of these groups. A second impact is that the Master's program in Reading has been modified and greatly improved.

The research has reached out beyond the local level, having been reported at the State Reading Research meeting. The Wisconsin State Reading Association has requested copies of the research report as presented to CORD. A summary will appear in the Wisconsin State Reading Association Newsletter.

The investigator, too, has benefited. Some of this research will be a part of a Ph. D. dissertation, but other research along these lines has been requested by the doctoral committee. The investigator is continuing the work she has started.

AN INVESTIGATION OF THE DEVELOPMENT AND USE OF THE AIR TABLE DEMONSTRATION TECHNIQUE AS COMPARED WITH CONVENTIONAL DEMONSTRATION METHODS

Investigator: Neil H. Stone
Wisconsin State University-Whitewater
Local Project No. 42

Some students who take courses in college physics are non-science majors, including some who are prospective teachers. The investigator chose the air table demonstrations in order to attempt to increase interest and understanding of these non-science majors in the study of physical science. The transparent air table was first found useful for demonstrations using an overhead projector in 1968. The research conducted by Stone is apparently the first attempt to determine whether the technique will produce better learning results than the traditional lecture-demonstration technique. In his investigation he utilized the help of Mr. Noel Hjelmhaug, Assistant Professor of Physics at WSU-Whitewater.

Evaluation of the experimental method was made using the Watson-Glaser Critical Thinking Test, an instructor-made physics test, the Wisconsin Inventory of Science Processes, ACT scores, and personal interviews. Simple analysis of variance was used to compare mean gains. At the time of this writing, final analyses have not been completed; they have been delayed because of a serious fire damaging computer and other facilities on the Whitewater campus.

It is already known that the Air Table Demonstration technique has a wide impact. Both students and instructors have learned from its use. The regional (Southeastern Wisconsin) high school physics program has recognized its values. The newly made demonstration air table has been put to wide use, and the demonstration is put on a screen where it can be viewed from some distance. Numerous college faculty members and high school teachers are building various versions of the table. The investigator meanwhile has developed a launcher and numerous other improvements. In summary, this $500 investment in teaching-learning research has had a marked impact on the teaching of certain aspects of physics.

CURRICULUM CHANGES IN THE PREPARATION OF READING TEACHERS

Investigator: Daniel A. Kies
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Local Project No. 27

A decade ago, a questionnaire was developed and used to determine the preparations or qualifications of teachers of reading. This piece of research is referred to as "the Austin study," and has been entitled, "The Torch-lighters." Mr. Kies has used the questionnaire developed for the Austin study, added some questions of his own, and tested the hypothesis that there has been no statistically significant change in the preparation of teachers of reading in the past nine years.

The rationale for the Kies study can be found in the fact that concern for teaching people to read has increased greatly in the past decade. Crash programs in reading, and research into the causes and remediation of reading difficulty have resulted. But are teachers of reading better qualified, as a result of all this activity?

The questionnaire, which concerned teacher preparation courses in reading: numer, content, and practices, was distributed to 530 randomly selected institutions of higher education. Responses of 365 institutions were finally used, and compared with the findings of a decade ago. Several nonparametric statistics were used in determining statistically significant differences.

Several important statistically significant differences were noted. More universities and colleges are offering reading as a separate course than as integrated with other language arts. Institutions offering reading as a part of an integrated course are devoting more time to reading than was done nine years earlier. More of them require a secondary reading course.

The professors who were polled now tend to believe, to a greater extent than those polled a decade ago, beginning reading vocabulary should be loosely controlled and come from a variety of sources; that the basic reading text is only one of a variety of tools for beginning reading instruction; that the forms and letters of the alphabet should be taught before the child has learned a sight vocabulary; that the approach used in teaching beginning reading should be varied from school to school depending upon factors such as pupil socio-economic level, intelligence, and teacher competency; and that the use of phonetic analysis in isolation and in conjunction with other word recognition techniques as a means of word identification.

The survey of current practices indicated that there is now more student teaching without concurrent class work, more days of observation of teaching, and more required tutoring children as part of undergraduate education than there was a decade ago.

What all this amounts to is that a great many teachers have changed their minds quite a bit in the last decade about why Johnny can't read or how he can be helped to read. The impact of this study will be to reinforce some ideas that have already become prevalent among those who prepare teachers of reading. The full Kies report will be published as a doctoral dissertation. It should be widely read.

DEVELOPMENT OF A MORE FLEXIBLE PHYSICAL SCIENCE LABORATORY PROGRAM FOR NON-SCIENCE MAJORS WITH SUPERIOR HIGH SCHOOL SCIENCE BACKGROUNDS

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Local Project No. 41

Challenging the college science students who are of superior ability is one of the major concerns of present-day college science teachers. Mr. Stekel gives three reasons why he, as well as some other college science teachers, is not satisfied with traditional methods of teaching laboratory science: (1) the structured or "cookbook" experiments do not give a realistic picture of how science operates; (2) much more elementary and high school science is now being learned, and colleges need to adapt to further student needs; and (3) there is need for further justification of expensive laboratory equipment.

The superior science students were identified in their physical science classes at WSU-Whitewater during the 1968-69 school year. The control group of 260 students were those who in the first semester were taught according to traditional laboratory science methods. During the second semester, 250 superior students were taught laboratory science according to a new plan. Students working in pairs selected from a list of topics and set up their own experiments, collected data, analyzed it, and summarized their results. Some of these students spent considerable extra time on their projects.

The control and experimental groups were tested for equivalency by means of the Watson-Glaser Critical Thinking Survey, the Wisconsin Science Process Inventory, an attitude toward science survey, and an achievement test nor directly related to laboratory work. Both groups were taught by the same two instructors. Significance of differences between experimental and control groups was determined through analysis of differences between pre- and post-test scores on the tests mentioned above.

The investigator learned some important facts in addition to the fact that the experimental group did not perform better on the established criteria. One laboratory program to be avoided is the free, totally unstructured laboratory. There is simply not enough time for the instructor to keep contact with students whose experiments take them in various directions, especially when 20 to 26 students made up each laboratory group. The investigator offers two possible ways of giving students more freedom to explore in laboratories: (1) a 2 or 3 week project period at the end of the semester; and (2) provide special apparatus and suggestions but allow the students to work out their own experiments.

In summarizing the impact of the Stekel experiment, one can note that his experiment was not successful, but from it he gained insight on how to proceed in the future to give more rein to the laboratory explorations of superior college science students.

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HOW BIG A RIPPLE? Supplement

AN EXPERIMENT USING THREE FILMS IN RHYTHMICAL GYMNASTICS USING HAND APPARATUS

Investigator: Mary I. McLellan
Wisconsin State University-La Crosse
Local Project No. 31

SUMMARY

This study had a twofold purpose: (1) to construct and produce a series of films as an instructional aid in the teaching of rhythmical gymnastics using small hand apparatus such as clubs, balls and hoops; and (2) to determine statistically the value of these films in the teaching of rhythmical gymnastics to college women physical education majors.

In determining the content of the films, a content check list was sent to 35 specialists in rhythmical gymnastics. From their responses and from discussions with teachers attending workshop sessions, a shooting script was formulated. A detailed presentation of beginning and intermediate skills was included in each of the three films. Piano improvisations were used for the musical accompaniment.

The participants in the films were college students with experience in rhythmical gymnastics, and a professor emeritus, all from Wisconsin State University at La Crosse. Actual filming took place at WKBT Television Studios in La Crosse, Wisconsin. The writer acted as technical director and editor for the entire production.

Subjects used to evaluate the films as aids to instruction were selected at random from the Sophomore and Junior classes in the Department of Physical Education for Women, Wisconsin State University, La Crosse. These 170 subjects were then randomly assigned to treatment groups. The Experimental group received instruction in rhythmical gymnastics by the investigator with the aid of films; the Control group received instruction from the same instructor without the aid of films. Students were evaluated on three different skills for each of clubs, balls, and hoops by a panel of five qualified judges.

As judges' ratings were used as the measure of skill development, and these measures were not truly quantitative, it was necessary to use non-parametric statistical procedures.

Kendall's Coefficient of Concordance was computed to determine the degree of relationship among the judges' ratings. The values obtained far exceeded those shown for the .05 level of significance; therefore it was concluded that the agreement among the five judges was higher than it would have been by chance.

In an attempt to determine whether any differences existed between the Experimental and Control groups and the Sophomore and Junior groups, the Mann-Whitney U test for independent groups was used. These values yielded isolated cases of significance in one club skill test and five hoop skill tests in favor of the Control and Junior groups. No significant differences were found for any of the ball skills.

An additional test, the Kruskal-Wallis One-way Analysis of Variance by Ranks was administered to see whether any differences occurred among the four groups used in this study. This test yielded somewhat the same results, with the exception that significant differences did occur between the Junior Experimental and Control groups over the Sophomore groups at the .05 level. It appeared that the use of films was a valuable aid to the Junior students.

Within the limitations of this study, and on the basis of the data presented, the following conclusions seemed justified. Even though there seemed to be little over-all statistical benefit in using films as aids to regular instruction in teaching rhythmical gymnastics to beginners, the films did appear to be of benefit to the Junior Experimental group. It was observed that the addition of the films appeared to increase motivation and interest in rhythmical gymnastics and eliminated much of the trial-and-error learning period for the students. Films such as the ones developed for this study would likely have their greatest value in assisting the inexperienced teacher with a limited background in rhythmical gymnastics.

AN INVESTIGATION OF RELATIVE PERFORMANCE FACTORS IN FRESHMAN ENGLISH AT WISCONSIN STATE UNIVERSITY-RIVER FALLS

Investigator: Robert H. Beck
Wisconsin State University-River Falls
Local Project No. 1

SUMMARY

Since it was reorganized in 1946, Freshman English at WSU-River Falls has tended to emphasize the traditional goals of the effective use of written language, the reading of English with ease and competence, the interpretation and evaluation of the written and spoken language and an examination of language in terms of its function.

To evaluate the effectiveness of the program, 100 incoming freshmen (Group A) were requested to postpone freshman English to their sophomore year, another 100 (Group B) were asked to postpone the first term to their sophomore year, another 100 (Group C) were asked to postpone their second term to the sophomore year, another 100 (Group D) were asked to postpone their third term with the remainder of the freshmen (approximately 600) following the normal sequence. All assignments to experimental groups were randomly made. At the end of the academic year, 244 randomly selected subjects were administered a written proficiency examination, the Brown-Carlson Listening Test, the Iowa Reading Test and a language-knowledge test devised by the staff.

The data collected in the above manner were subjected to analysis of variance with the following general results:

1. Those students who had not taken the units on the language-knowledge part of the sequence scored low on the test devised to test this material.
2. No differences were noted between the experimental groups and the control groups on the other measures applied.
3. Women did better than men on all tests.

Based on the evidence from this study, the philosophy, content and teaching methods of the Freshman English sequence need to be re-examined and re-evaluated.

A STUDY IN THE UTILIZATION OF TECHNOLOGICALLY ADVANCED TECHNIQUES FOR TEACHER-PARENT-CHILD ASSESSMENT

Investigator: Phyliss Ravey
Other Investigators: Hildegard Kuse, Dennis Fields
Wisconsin State University-Stevens Point
Local Project No. 36

SUMMARY

The kindergarten teacher often finds conventional written reports with an emphasis upon academic and social progress difficult to use effectively with parents of five year olds.

In a study conducted with five year olds at the University Laboratory School at Wisconsin State University-Stevens Point the use of video tape as an alternate form of communication as well as a means of parent orientation was assessed. It was hypothesized that parents would be able to see and also, evaluate their child's learning behavior directly without initial elaboration by the teacher. The teacher's role in the conference would then become one of a co-observer and consultant rather than a reporter and judge.

A FOLLOW-UP OF PSYCHOLOGY MAJORS GRADUATED FROM THE LA CROSSE STATE UNIVERSITY, 1965-1968, FOR THE PURPOSE OF EVALUATING THE UNDERGRADUATE PSYCHOLOGY PROGRAM

Investigator: Thomas M. Harris
Wisconsin State University - La Crosse
Local Project No. 20

SUMMARY

A 110-item questionnaire requesting present activities, future goals, and an evaluation of college courses and educational experience was sent to every psychology major ever graduated from Wisconsin State University - La Crosse, plus to 50 graduated minors and 100 present students. Resulting ratings of the usefulness of each psychology course was presented to faculty and used in advising students.

STUDENT AND FACULTY PERCEPTIONS OF DESIRED COUNSELING CENTER RATE

Investigator: John B. Hamann
Wisconsin State University - River Falls
Local Project No. 19

SUMMARY

The idea for this study developed from the feeling that the counseling staff should have added knowledge and understanding of the desires of the people on the Campus they were serving.

This descriptive study was designed to determine student and faculty desires for counselor and counseling center functioning. An appropriate questionnaire was developed and mailed to all faculty members and to a random sample of 500 students at WSU-River Falls.

Results of the questionnaire indicated that students and faculty perceive the three traditional counseling services of personal, vocational, and educational counseling as being the most important functions for the Counseling Center to perform. Contrary to recent writings in the field, personal growth and development counseling was ranked rather low in importance. Perhaps this may be attributed to some of the controversy about programs such as sensitivity groups or to the newness of such programs on our Campus. It would appear desirable for the Counseling Center to provide some educational information in this area to enhance the knowledge regarding the benefits of this type of involvement.

Regular University hours do not seem to meet the desires of the students or the faculty. It may be desirable to have counselors available during evening hours. It would appear to be of considerable importance to have counselors available on emergency basis.

Counselors frequently perceive a need for an outreach program, but both faculty and students perceived an established Counseling Center as a more desired location. Somewhat surprisingly, students ranked dorms as the least desirable location for counselors. In this some vein faculty perceived the library and classroom buildings as the least desirable location for counselors. It may be that neither students nor faculty want counselors infringing on their domains.

Sex of the counselor is apparently not perceived as being an influencing factor as far as students or faculty see their ability to help. If a preference exists, it favors male counselors, but this is not strong.

Age is not an influencing factor for the faculty, but it apparently is one of considerable importance for students. The Counseling Center should be acutely aware that students desire to associate with young counselors and that they may be reluctant to seek out an older counselor.

A rather large number of faculty felt that the Counseling Center should have considerable autonomy. This may reflect a feeling of the need for counselors to be disassociated from any possible social stigma of being associated with Administration.

Although students indicated they would turn to counselors for assistance before they would seek the help of faculty, resident hall directors or resident hall assistants, they apparently do not do this in practice. The thought of proximity arises and yet students don't see dorms as a desirable location for counselors.

Suggestions for further study would certainly be in the area of why students seek assistance from lay persons when professional help is available. The age-old problem of why students do not turn to counselors for assistance appears to still be very much with us.